



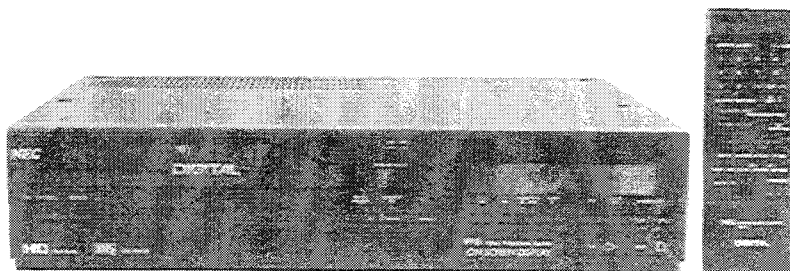
**DIGITAL
MODEL DX-1000G**

COLOR VIDEO CASSETTE RECORDER **SERVICE MANUAL**

PARTS NO. 549-91-0408



**Better Service
Better Reputation
Better Profit**



SPECIFICATIONS

Format	: VHS PAL standard	Video	
Recording system	: Rotary, slant azimuth two-head helical scanning system	Input	: 0.5 to 2.0 Vp-p, 75 ohms unbalanced
Video signal system	: PAL colour and CCIR monochrome signal, 625 lines.	Output	: 1.0 ± 0.1 Vp-p, 75 ohms unbalanced
Tape width	: 12.65 mm (1/2 inch)	S/N ratio	: More than 43 dB
Tape speed	: 23.39 mm/sec.	Horizontal resolution	: 250 lines with the SHARPNESS control at center position.
Maximum recording time	: 240 min. with E-240 video cassette	Audio	
Temperature operating	: 5°C to 40°C	Input	: -8 dB, 47 kohms unbalanced
storage	: -20°C to 60°C	Output	: -6dB, high impedance load
Channel coverage	: VHF BAND VL: 47 - 118 MHz VHF BAND VH: 118 - 300 MHz UHF BAND U: 470 - 862 MHz	S/N ratio	: More than 40 dB
Antenna output	: UHF channels 30-39 (adjustable) 75 ohms unbalanced	Frequency range	: 70 Hz to 10,000 Hz
Power consumption	: 40 Watts	Timer	: Maximum 1-year/4-event
Power requirement	: AC 220V ~ 50 Hz	Dimensions	: 430mm (W) × 99mm (H) × 175mm (D)
		Weight	: 7.8 kg
		Provided accessories	: Remote control unit Antenna cable Size R6 batteries (2 pieces)

Design and specifications are subject to change without notice

NEC Corporation
TOKYO, JAPAN

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SECTION 1

Important Safety Precautions

Prior to shipment from the factory, the products are strictly inspected to conform with the recognized product safety and electrical codes of the countries in which they are to be sold. However, in order to maintain such compliance, it is equally important to implement the following precautions when a set is being serviced.

● Precautions during Servicing

1. Locations requiring special caution are denoted by labels and inscriptions on the cabinet, chassis and certain parts of the product. When performing service, be sure to read and comply with these and other cautionary notices appearing in the operation and service manuals.

2. Parts identified by the \triangle symbol and shaded (▨) parts are critical for safety. Replace only with specified part numbers.

Note: Parts in this category also include those specified to comply with X-ray emission standards for products using cathode ray tubes and those specified for compliance with various regulations regarding spurious radiation emission.

3. Use specified internal wiring. Note especially:

- 1) Wires covered with PVC tubing
- 2) Double insulated wires
- 3) High voltage leads

4. Use specified insulating materials for hazardous live parts. Note especially:

- 1) Insulation Tape
- 2) PVC tubing
- 3) Spacers
- 4) Insulation sheets for transistors

5. When replacing AC primary side components (transformers, power cords, noise blocking capacitors, etc.) wrap ends of wires securely about the terminals before soldering. (Fig. 1)

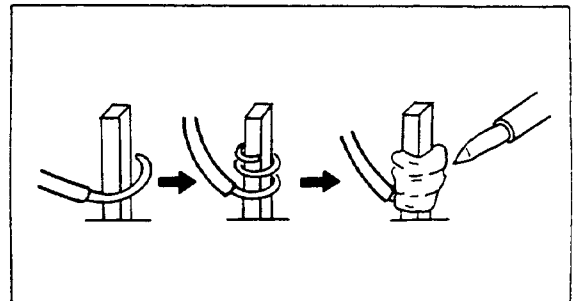


Fig. 1

6. Observe that wires do not contact heat producing parts (heatsinks, oxide metal film resistors, fusible resistors, etc.)

7. Check that replaced wires do not contact sharp edged or pointed parts.

8. When a power cord has been replaced, check that 10–15 kg of force in any direction will not loosen it. (Fig.2)

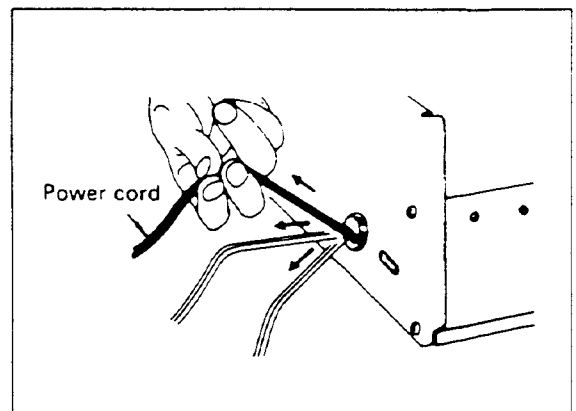


Fig. 2

9. Also check areas surrounding repaired locations.

10. Products using cathode ray tubes (CRTs)

In regard to such products, the cathode ray tubes themselves, the high voltage circuits, and related circuits are specified for compliance with recognized codes pertaining to X-ray emission. Consequently, when servicing these products, replace the cathode ray tubes and other parts with only the parts specified. Under no circumstances attempt to modify these circuits. Unauthorized modification can increase the high voltage value and cause X-ray emission from the cathode ray tube.

● Safety Check after Servicing

Examine the area surrounding the repaired location for damage or deterioration. Observe that screws, parts and wires have been returned to original positions. Afterwards, perform the following tests and confirm the specified values in order to verify compliance with safety standards.

1. Insulation resistance test

Confirm the specified insulation resistance or greater between power cord plug prongs and externally exposed parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.). See table below.

2. Dielectric strength test

Confirm specified dielectric strength or greater between power cord plug prongs and exposed accessible parts of the set (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.) See table below.

3. Clearance distance

When replacing primary circuit components, confirm specified clearance distance (d),(d') between soldered terminals, and between terminals and surrounding metallic parts. See table below.

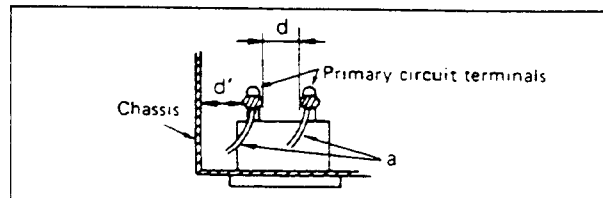


Fig. 8

Table 1: Ratings for selected areas

AC Line Voltage	Region	Insulation Resistance	Dielectric Strength	Clearance Distance(d),(d')
100 V	Japan	$\geq 1 \text{ M}\Omega/500 \text{ V DC}$	1 kV 1 minute	$\geq 3 \text{ mm}$
110 to 130 V	USA & Canada	---	900 V 1 minute	$\geq 3.2 \text{ mm}$
* 110 to 130 V 200 to 240 V	Europe Australia	$\geq 10 \text{ M}\Omega/500 \text{ V DC}$	4 kV 1 minute	$\geq 6 \text{ mm (d)}$ $\geq 8 \text{ mm (d')}$ (a Power cord)

* Class II model only.

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

4. Leakage current test

Confirm specified or lower leakage current between B(earth ground, power cord plug prongs) and externally exposed accessible parts (RF terminals, antenna terminals, video and audio input and output terminals, microphone jacks, earphone jacks, etc.).

Measuring Method: (Power ON)

Insert load Z between B(earth ground, power cord plug prongs) and exposed accessible parts. Use an AC voltmeter to measure across both terminals of load Z. See figure and following table.

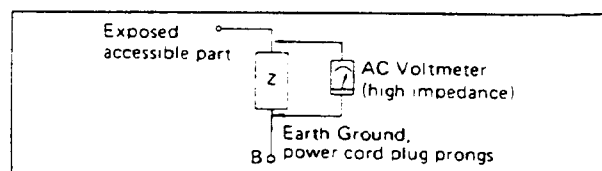


Fig. 9

Table 2: Leakage current ratings for selected areas

AC Line Voltage	Region	Load Z	Leakage Current (i)	Earth Ground (B) to:
100 V	Japan	$1 \text{ k}\Omega$	$i \leq 1 \text{ m A rms}$	Exposed accessible parts
110 to 130 V	USA & Canada	$0.15 \mu\text{F}$ $1.5 \text{ k}\Omega$	$i \leq 0.5 \text{ m A rms}$	Exposed accessible parts
110 to 130 V 200 to 240 V	Europe Australia	$2 \text{ k}\Omega$	$i \leq 0.7 \text{ m A peak}$ $i \leq 2 \text{ m A dc}$	Antenna earth terminals
		$50 \text{ k}\Omega$	$i \leq 0.7 \text{ m A peak}$ $i \leq 2 \text{ m A dc}$	Other terminals

Note. This table is unofficial and for reference only. Be sure to confirm the precise values for your particular country and locality.

IMPORTANT: It is permissible to record television programmes only in the event that third party copyrights and other rights are not violated.

WARNING:
TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS UNIT TO RAIN OR MOISTURE.

CAUTION

Dangerous voltage inside. Refer internal servicing to qualified service personnel. To prevent electric shock or fire hazard, remove the power cord from the AC outlet prior to connecting or disconnecting any signal lead or aerial.

MAINS POWER SWITCH

The mains switch is located on the rear connector panel. Setting this switch to OFF removes all applied power from the set including the timer clock. Switching on or off the recorder section is performed with the secondary power switch, labelled OPERATE, on the front panel.

NOTE: The rating plate and the safety caution are on the rear of the unit.

CAUTION: When you are not using the VCR for a long period of time, it is recommended that you disconnect the power cord from AC outlet.

This instruction manual is important to you. Please read it. In a brief, concise manner, it shows exactly how to connect, operate and adjust the VCR for best performance. It can save you money. It shows you simple things to do and check before you call for help...so you may save the cost of unnecessary service.



Only cassettes marked "VHS" can be used with this video cassette recorder.

VHS High Quality technology is incorporated into VCR's marked "HQ". This unit is compatible with conventional VHS VCR's.

GENERAL NOTES:

- This recorder is designed to operate in a horizontal position.
- Do not install the recorder in a location near heat sources, such as radiators, air ducts, etc., or in a place subjects to direct sunlight, excessive dust, mechanical vibration or shocks.
- Allow adequate air circulation to prevent internal heat built-up. Do not place the recorder on surfaces such as rugs, blankets, etc, or near materials such as curtains or drapes, etc., that may block the ventilation holes.
- Keep the recorder and video cassette away from strong magnetic fields.
- After playing a tape, remove the video tape from the VCR if the VCR is not going to be used for an extended length of time.
- Do not transport the recorder with a video cassette in place.
- To disconnect the cord, pull it by the plug. Never pull the cord itself.
- Generally, head cleaning by the user is not required. Should snow or streaks appear in the playback picture after having used the recorder for an extended period of time, consult your nearest NEC dealer.
- Should any liquid or solid object fall into the VCR cabinet, unplug the recorder and have it checked by qualified personnel before operating it any further.
- Save the original shipping carton and packing material; they will come in handy if you ever have to ship your recorder.
- For maximum protection, repack the recorder at it was originally packed at the factory.
- This machine is designed to record and play back the PAL colour and CCIR monochrome video signals.
- Do not place any magnetism emitting device (TV set, etc.) on top of the VCR. Otherwise noise or other screen disturbances may occur.
- Do not place any object heavier than 15 kg on the VCR.

FEATURES

NEC DIGITAL NOISE REDUCTION

This VCR features NEC's Digital Noise Reduction System. Using a technique known as field correlation, video noise is dramatically reduced without loss of detail. In fact, NEC's Digital Noise Reduction system improves the video signal-to-noise ratio up to 9dB!

DIGITAL SPECIAL EFFECTS

NEC's digital technology produces noise-free STOP ACTION (still) without time lag and SLOW MOTION (1/3 normal speed).

DIGITAL PICTURE MEMORY

While viewing a tape or TV program through the VCR's built-in tuner, a live image can be memorized and frozen on the TV screen while the cassette or TV program continues to run in real-time.

STROBE ACTION

Variable Strobe effects are provided for both video playback and on-air TV broadcasts without audio interruption. This exciting feature is a new video effect and not available in conventional VCRs.

1-YEAR/4-EVENT PROGRAMMABLE TIMER

The user can programme the timer so that the VCR will automatically record up to four TV shows in the coming year. An indicator points out errors made during programming, and if a prerecorded tape with a missing safety tab is accidentally inserted, the unit will eject the cassette.

ON SCREEN FUNCTION AND TIMER DISPLAY

When you activate a tape function, such as play, fast-forward or rewind, the corresponding display appears on the TV screen. When programming the timer, a menu showing the timer contents is displayed, making remote programming easy.

MULTI FUNCTION DISPLAY

You can confirm the operating status of the VCR at a glance thanks to a fluorescent indicator that graphically shows the engaged mode. Modes shown are: PLAY, RECORDING, PAUSE/STILL, FAST FORWARD, REWIND, CUE, REVIEW and STOP. Other indications shown are CASSETTE IN, NO TAB, 4-DIGIT COUNTER.

SEGMENT RECORDING

Segment recording allows the VCR timer to automatically stop recording and shut power off. Each touch of the SEGMENT REC button will add 30 minutes worth of recording time, up to a maximum of 5 hours. In addition, the setting time can be set to one minute segments by pressing the CHANNEL/SET (V)/(^) buttons.

JET SEARCH PROVIDES FAST LOCATION OF SCENE

The picture search function runs the tape at 4 times the speed of the normal playback, making it easy to locate a specific scene. If you want to search for a particular scene faster, then you should press the Fast Forward or Rewind button a second time. When you do, the JET SEARCH function will run the tape, at 8 times normal playback.

55 FUNCTION UNIFIED REMOTE CONTROL UNIT OPERATES BOTH VCR AND TV.

The unified infrared remote control supplied with the DX-1000B is capable of operating both the VCR and compatible NEC TVs. This remote control unit can control basic VCR/TV functions as well as timer programming functions.

HQ (HIGH QUALITY) VIDEO SYSTEM

The "High Quality" circuit increases the dipping level for peak white by 20%, adding sharpness and ensuring detailed reproduction thanks to the use of a Detail Enhancer Technic.

VOLTAGE SYNTHESIZED TUNER

The built-in tuner covers all VHF and UHF channels. Of all the channels which are tunable, 40 may be conveniently memorized and recalled.

AUTO POWER ON

We have made the VCR as automatic as technically possible. When a tape is inserted, power is automatically switched on.

AUTO PLAYBACK

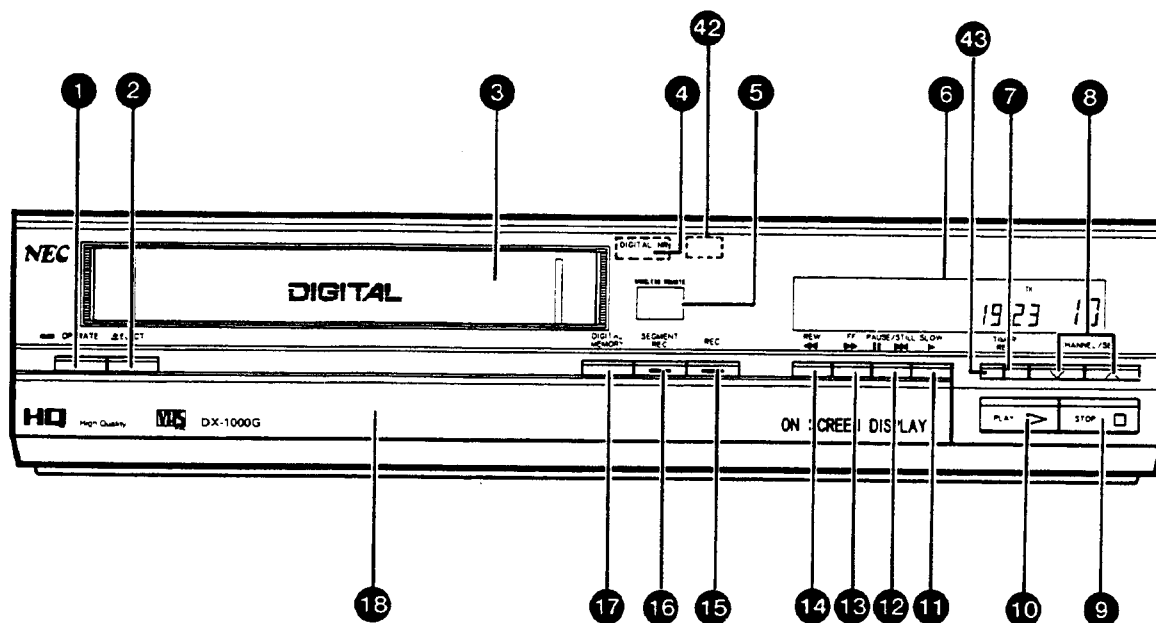
The VCR will begin playback automatically if the video cassette has no safety tab.

POWER OFF EJECT

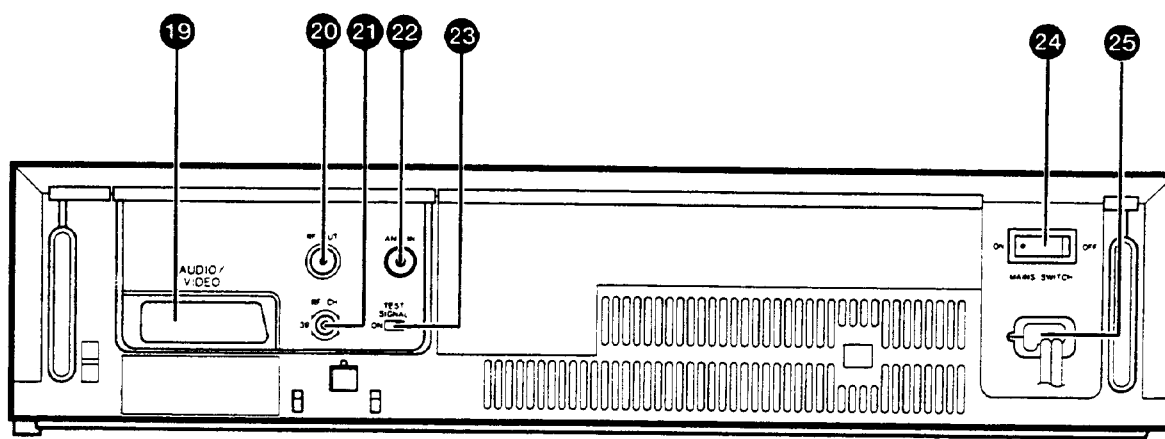
Even if the VCR is turned off, the tape can be removed by pressing the EJECT button.

CONTROLS AND COMPONENTS

FRONT VIEW



REAR VIEW



FRONT VIEW:

1 OPERATE button

This button is used to turn the VCR on and off.

2 EJECT button

Press this button to remove the cassette.

3 Cassette compartment

4 DIGITAL NR indicator

Lights when the DIGITAL NR switch is switched ON.

5 Infrared remote sensor

This sensor is used for receiving infrared signals from the remote control.

6 Display

7 TIMER REC button

This button is used for unattended recording after the timer has been programmed. When this button is on, the timer recording indicator "□" lights in the display. When this light is on, the unit is under the control of the timer and cannot be operated manually.

8 CHANNEL/SET (V)/(^) buttons

Use to select the specific channel which you wish to view or record. Also used during Time Setting or Timer Programming.

9 STOP button

Press this button to stop the tape.

10 PLAY button

Press this button to play back pre-recorded tapes.

11 SLOW button

Press this button to activate slow motion playback.

12 PAUSE/STILL button

A) Use to temporarily stop the tape during recording or playback.

B) Use to view a still picture on the TV screen.

13 FAST FORWARD/CUE button

Press this button to:

A) move the tape forward rapidly.

B) to view a high-speed forward picture (picture search) during playback.

14 REWIND/REVIEW button

Press this button to:

A) rewind tape in reverse rapidly.

B) to view a high-speed reverse picture (picture search) during playback.

15 REC button

Recording is started by pressing this button.

16 SEGMENT REC button

Press this button to set the segment recording timer for simplified timer recording up to 5 hours in 30 minute segments.

17 DIGITAL MEMORY button

When pressed during playback or recording, a stop action picture is displayed, while the tape continues to run in real-time.

When pressed while monitoring a TV program through the VCR's built-in tuner, a still picture is displayed while the TV program continues live.

18 Front Compartment

REAR VIEW:

19 21-pin SCART Connector (AUDIO/VIDEO connector)

A 21-pin Standardised SCART connector for connection to a TV equipped with the same type of connector.

20 RF OUT connector

Connect to the antenna terminal of a TV with the antenna cable (provided).

21 RF converter frequency adjustment screw

22 ANT IN terminal

Connect a TV antenna to this connector.

23 TEST SIGNAL switch

Normally, set this switch to the OFF position.

This switch is used when tuning your TV to the VIDEO CHANNEL

24 MAINS switch

To apply power to the VCR, set this switch to ON. When this switch is set to OFF, the timer clock and the built-in aerial circuit are off. In this condition, the TV connected to this VCR will not be able to properly receive off-air TV programmes. Normally, leave this switch set to ON.

25 Power cord

Connected AC 220 V ~, 50 Hz.

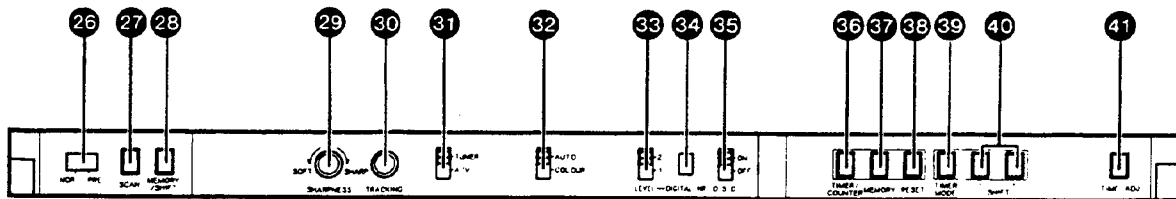
42 VPS signal Indicator

Lights when a VPS signal is received.

43 VPS REC button

This button is used for unattended recording after the timer has been programmed. When this button is on, the timer recording indicator "□" and VPS recording indicator "VPS" light in the display. When these lights are on, the unit is under the control of the VPS timer and cannot be operated manually.

FRONT COMPARTMENT



26 NORMAL/PRESET (NOR./PRE.) switch

This switch is used for Channel presetting.
This switch should usually be set to the NOR. position.

27 SCAN button

This button is used for Channel presetting.
The tuning channel moves to a higher channel by pressing this button.

28 MEMORY/SHIFT button

This button is used for Channel presetting.
This button is pressed to enter a tuned channel into memory.

29 SHARPNESS control

Slide this control to the left (SOFT) to soften the picture, and slide it to the right (SHARP) to sharpen the picture.

30 TRACKING control

Use this control during playback to fine tune the picture and eliminate or reduce noise bars.

31 Input select switch

TUNER: To record signals from the built-in tuner.
A/V: To record signals from a source connected to the SCART connector.

32 AUTO/COLOUR select switch

AUTO: Colour or B/W mode is automatically selected. Set to this position for normal use.
COLOUR: Set to this position when the input or playback video signal is in colour.

33 NR (Noise Reduction) LEVEL control

Determines the amount of digital noise reduction applied to the picture when the DIGITAL NR switch is set to the ON position.

34 DIGITAL NR (Noise Reduction) switch

When switched ON, the digital noise reduction circuit is activated, reducing video noise. Digital noise reduction is not applied when this switch is in the OFF position.

35 ON SCREEN Display (O.S.D) switch

ON: Function display appears On Screen
OFF: On Screen function display does not appear on screen.

36 TIMER/COUNTER button

This button switches the digital display between the timer and tape counter modes.

37 MEMORY (counter) button

Enables you to automatically stop the tape at "0000" during rewind or fast forward.

38 RESET button

In normal operation pressing this button, the tape counter will be reset to "0000". If this button is pressed during timer programming, the re-entered programme will be cleared.

39 TIMER MODE button

Pressing this button changes the information appearing on the display from:
PRESENT TIME to TIMER PROGRAMMING to PRESENT TIME.

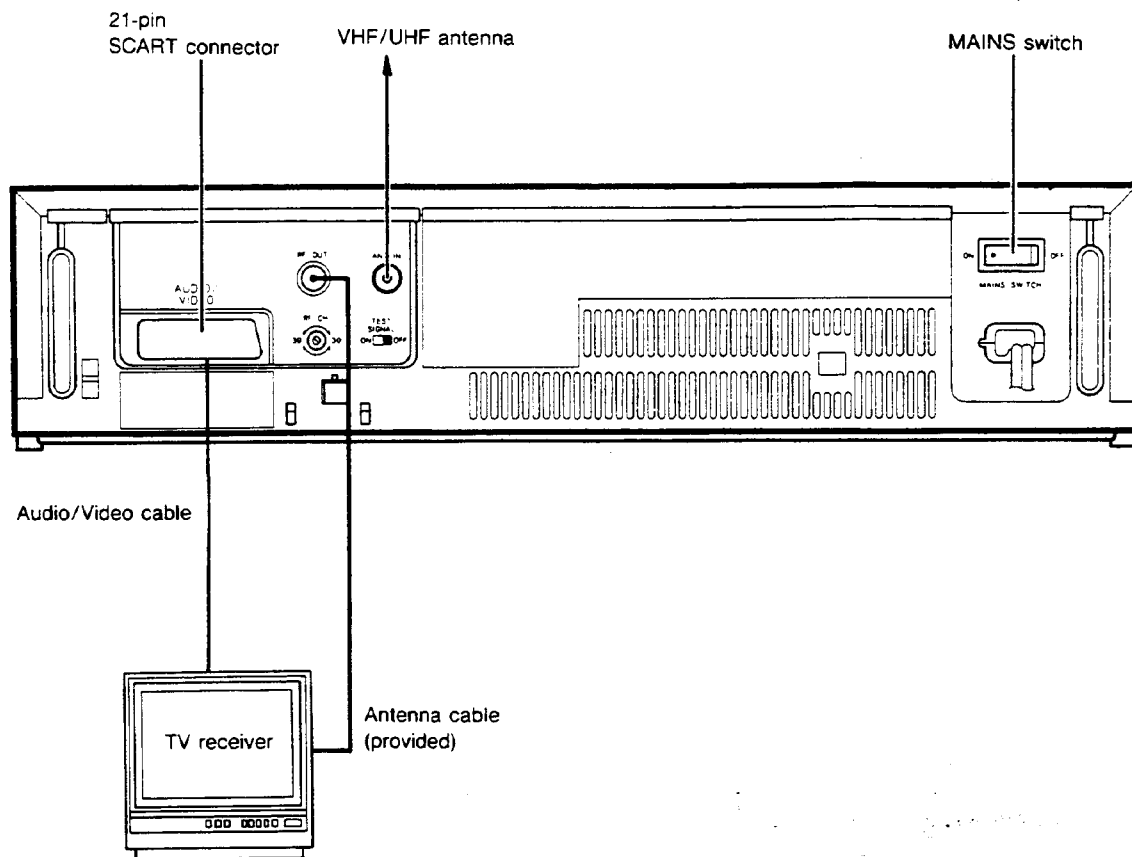
40 SHIFT (-)/(+) buttons

These buttons are used for Time Setting and Timer Programming.

41 TIME ADJUSTMENT (TIME ADJ.) button

This button is used for Time Setting.

ANTENNA CONNECTION



Procedure

1. Remove the antenna cable from the TV receiver and reconnect it to the VCR as illustrated. The VCR is then ready to record off-air programmes.
2. Connect the VCR to the TV using the antenna cable (provided) as illustrated. The TV is then ready to receive TV broadcast programmes as well as accommodate video cassette playback.
3. Connect the 21-pin SCART connector on the rear of the VCR and the SCART connector of the TV set using the Audio/Video cable.

Note:

Even when you are not using the VCR, the rear panel MAINS switch should be set to ON in order to be able to view TV broadcasts with this connection.

For reference

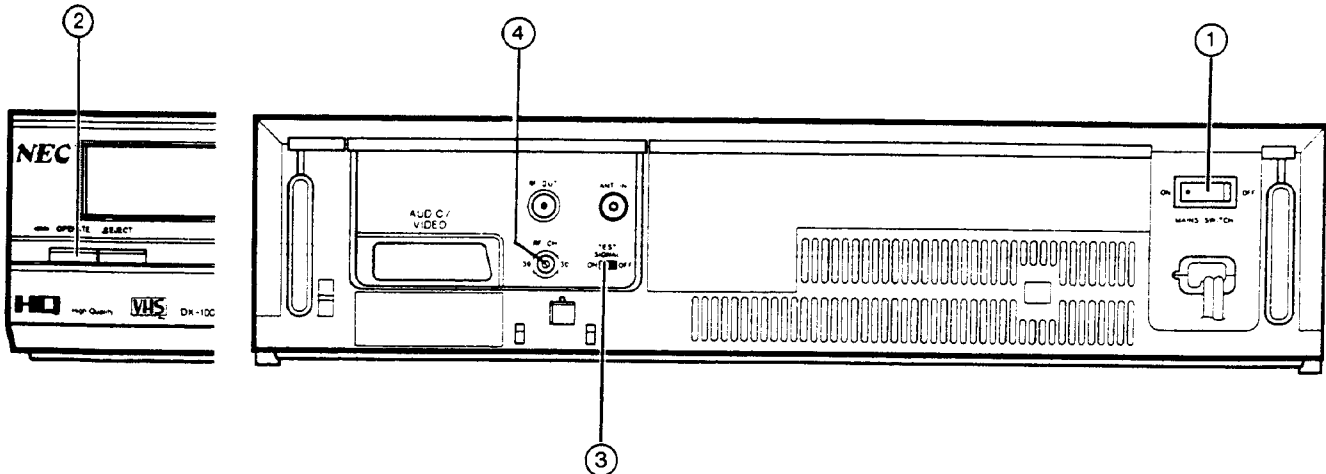
- Previously, when you were using only the TV, broadcast signals went to the TV directly from the antenna. Now, after you have connected the VCR to the TV, broadcast signals enter the VCR directly from the antenna and go to the TV through the VCR.
- In order to transmit entering broadcast signals to the TV, an antenna circuit is built into the VCR. This antenna circuit must be on as long as you are viewing TV programmes even though you are not using the VCR. If the MAINS switch is set to OFF, the VCR's antenna circuit is also switched off. In this state, the connected TV cannot properly receive off-air TV programmes and a good picture is not obtained. Therefore, normally, keep the MAINS switch set to ON.

VIDEO CHANNEL SETTING

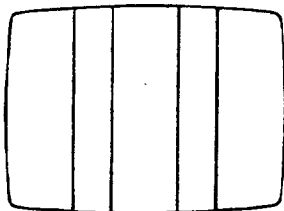
Resetting the RF converter output channel

The built-in RF converter permits playback of video and audio recordings through a TV. The signals from the RF converter are viewed through a vacant channel not used for TV broadcasting in your viewing area.

The converter channel of all units is set to UHF channel 36 prior to shipment. Setting your TV receiver to UHF channel 36 may provide video playback. However, to obtain the best possible reproduction on your TV receiver, accurate adjustment of the RF converter output channel is required.



1. Set the MAINS switch ① to ON and press the OPERATE button ② on the front panel to turn on the VCR. Turn on the TV.
2. Set the TEST SIGNAL switch ③ to ON.
3. Adjust the TV in the vicinity of UHF channel 36 until you bring in the two white signal bars on the screen as illustrated. This setting is now the VIDEO CHANNEL of the TV to which the VCR is connected.
4. Set the TEST SIGNAL switch ③ to OFF.



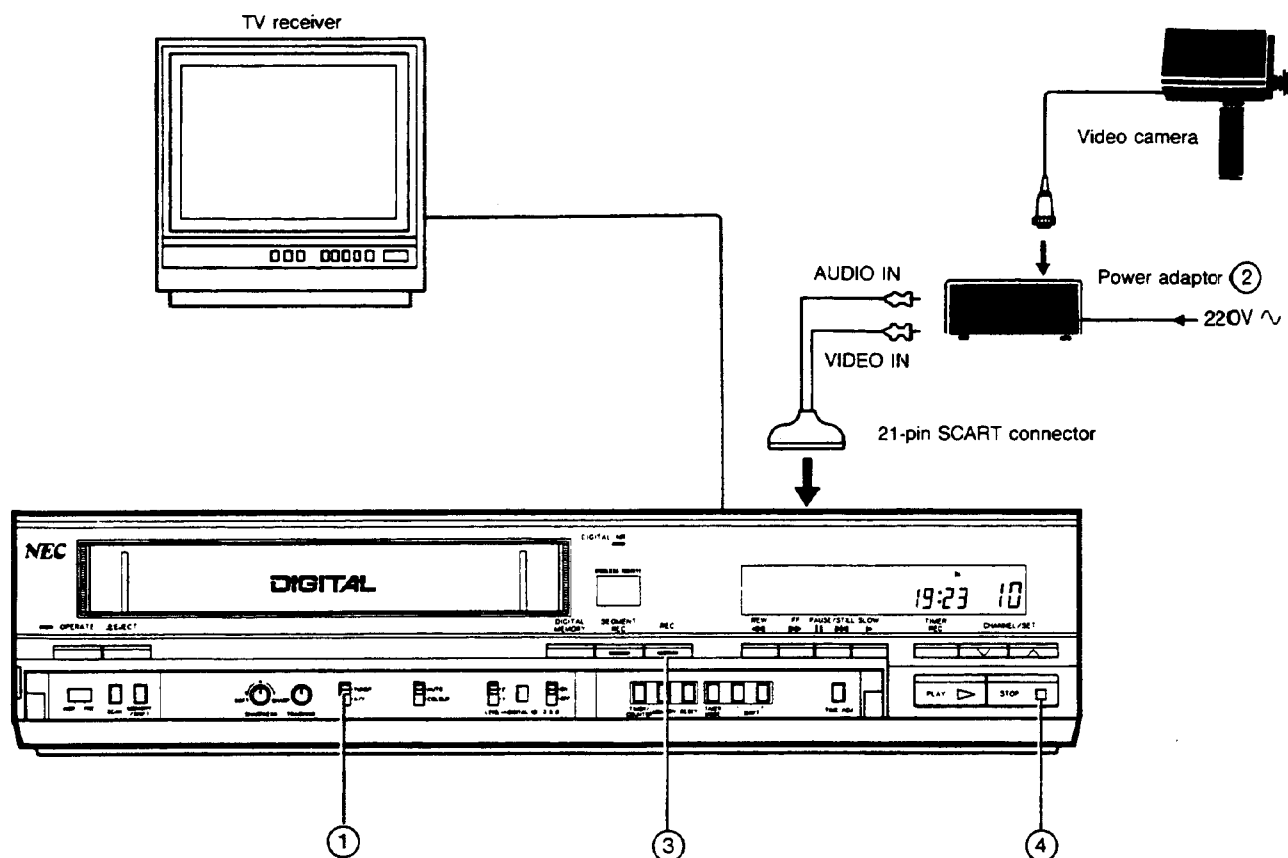
Notes:

- When you adjust the TV to channel 36 for video playback, if some interference noise is seen on the screen because of broadcasts on neighbouring channels or if preset broadcasts are affected in terms of picture quality, it is necessary to adjust the RF converter output more accurately the RF converter output.
- For this purpose, insert a screwdriver into the hole on the rear of the VCR and re-adjust the RF converter frequency adjustment screw ④ in minute steps. Then tune the TV once again until a clear picture is obtained. This adjustment requires extreme precision and must be done with the utmost care. We recommend that you consult your NEC dealer for making this adjustment.
- Be sure to set the TEST SIGNAL switch ③ to OFF after VIDEO CHANNEL tuning has been completed.
- If a prerecorded VHS cassette is available, TV adjustment for VIDEO CHANNEL setting is also possible using it to obtain a playback picture. Insert the cassette and operate the VCR for playing back the cassette. Then tune the TV to obtain clear picture and sound while monitoring the playback picture on the TV screen.
- If the TV is not provided with an AFC (Automatic Frequency Control) circuit, perform fine tuning of the TV receiver when you are actually viewing playback of video cassettes.

CAMERA RECORDING

Preparation

- Connect a video camera according to the illustration below.
- Insert a video cassette with the safety tab intact.
- Turn the TV on and adjust the channel to the video channel.



1. Set the input select switch ① to A/V.
 2. Turn the power adaptor on ② and make adjustments on the video camera. (Please read the owner's operation manual of the camera.)
 3. Press the REC button ③.
 4. Press the STOP button ④ to stop recording.
- When reverting back to recording the TV programme, set the input select switch ① to TUNER.

BEFORE REQUESTING SERVICE

Before requesting service, check the following items. It can save you time and money.

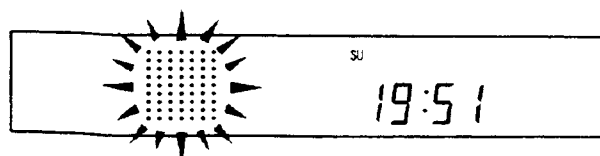
PROBLEM	CHECK	CORRECTION
No Power	AC cord plugged in? MAINS switch on? Timer recording set?	Plug in AC cord. Turn on MAINS switch. Set timer recording off.
Video Cassette cannot be inserted.	A video cassette already in? A video cassette inserted correctly?	Replace it. ● Insert the video cassette with the window side up and the safety tab facing you.
TV Programmes cannot be recorded.	Connection between VCR and antenna correct? Receiving Channel of VCR tuned correctly? Safety tab broken? Input select switch position	Fix connections Adjust to desired channel. If broken, fix adhesive tape over the hole. Set to TUNER.
Timer recording cannot be performed.	Recording start/stop time set correctly? TIMER REC button on?	Set correct times. Press TIMER REC button on. ● In the event of a power interruption, the timer will lose its preset time memory and timer recording will not be performed.
No playback picture	TV tuned to VCR's RF output channel?	Tune TV to VCR's RF output channel (30 to 39).
Playback picture is noisy or contains streaks.	TRACKING in correct position?	Adjust TRACKING control.
Top of the playback picture waves back and forth excessively.		Adjust horizontal hold control on TV.

If A Power Failure Occurs ...

- There are two cases; (a): if a operate failure continues for less than approx. 10 minutes, the display disappears but the clock continues operation. When operate resumes, the correct current time will reappear in the display. The contents of timer programming remains in effect. Also. (b): If a operate failure continues for longer than 10 minutes, the display will return to "0:00", "TH" (Thursday), and blink off and on when power returns. In this case, reset the clock and timer programming again, referring to pages 14 and 21 to 24.

When Tape Movement Stops Automatically ...

- If trouble occurs during tape movement or to the mechanism inside the VCR, a safety device works to stop the operation of the VCR automatically. This prevents damage to the VCR and the tape. If this occurs the ALARM indicator will be shown in the display and the power will be turned off automatically.



(STOP indicator is flashing.)

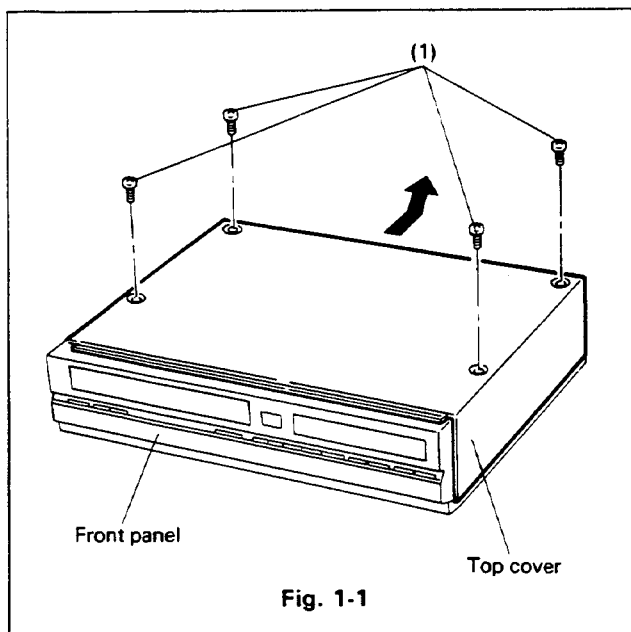
- Pressing the OPERATE button will turn the VCR on.
- If moisture (dew) is present on the head drum assembly inside the VCR, the VCR cannot be operated. Remove the video cassette, and operate again after a few hours. Leave the power cord plugged in and the MAIN switch on for the anti-dew function to take place.
- This VCR has a HUMIDITY REDUCTION SYSTEM, which operates only when the power cord is plugged into an electrical outlet and the VCR is turned off. It is suggested that the power cord be kept connected to an electrical outlet during winter and other months of HIGH HUMIDITY to protect the device from MOISTURE, unless you will be away for a long period of time.

SECTION 2 DISASSEMBLY

1. REMOVING THE CASE

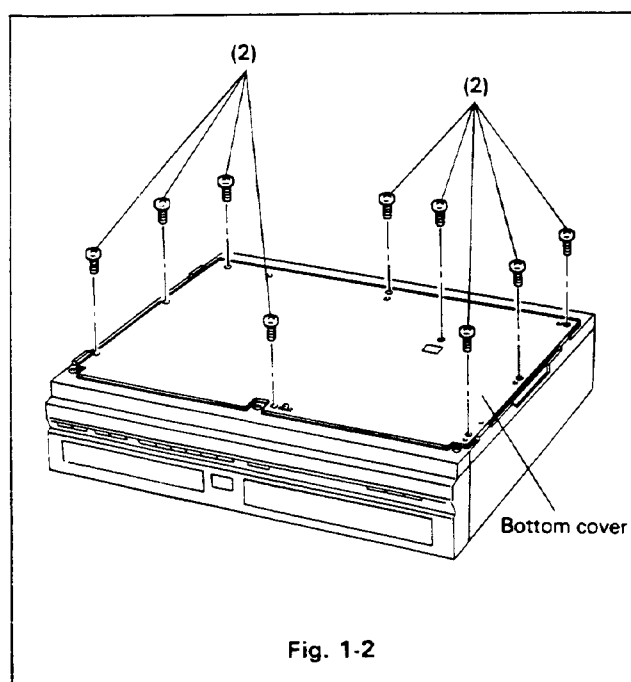
1-1. TOP COVER (Figure 1-1)

- (1) Remove four screws (1) on the top cover.
- (2) Lift the rear of the top cover to release it in the direction of the arrow from the front panel.



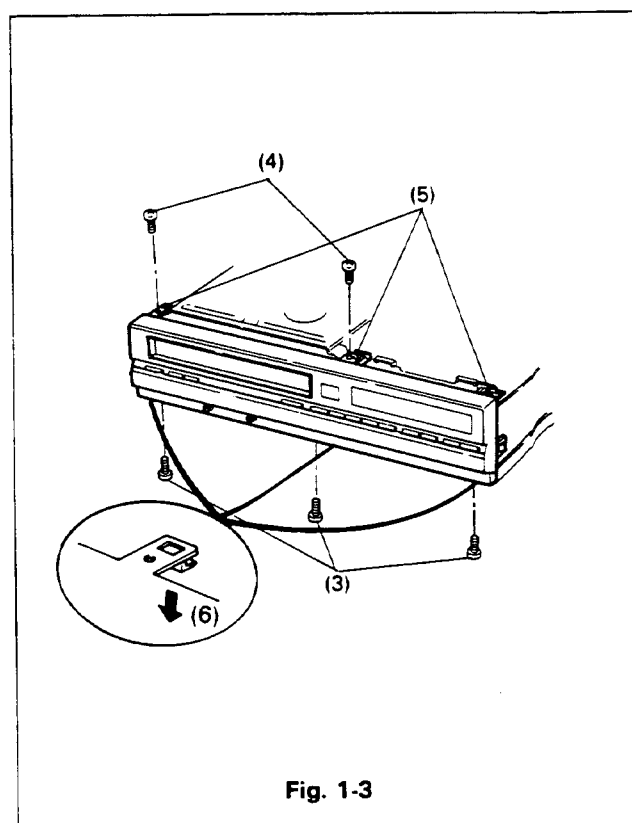
1-2. BOTTOM COVER (Figure 1-2)

- (1) Remove nine screws (2) on the bottom cover.



1-3. FRONT PANEL (Figure 1-3)

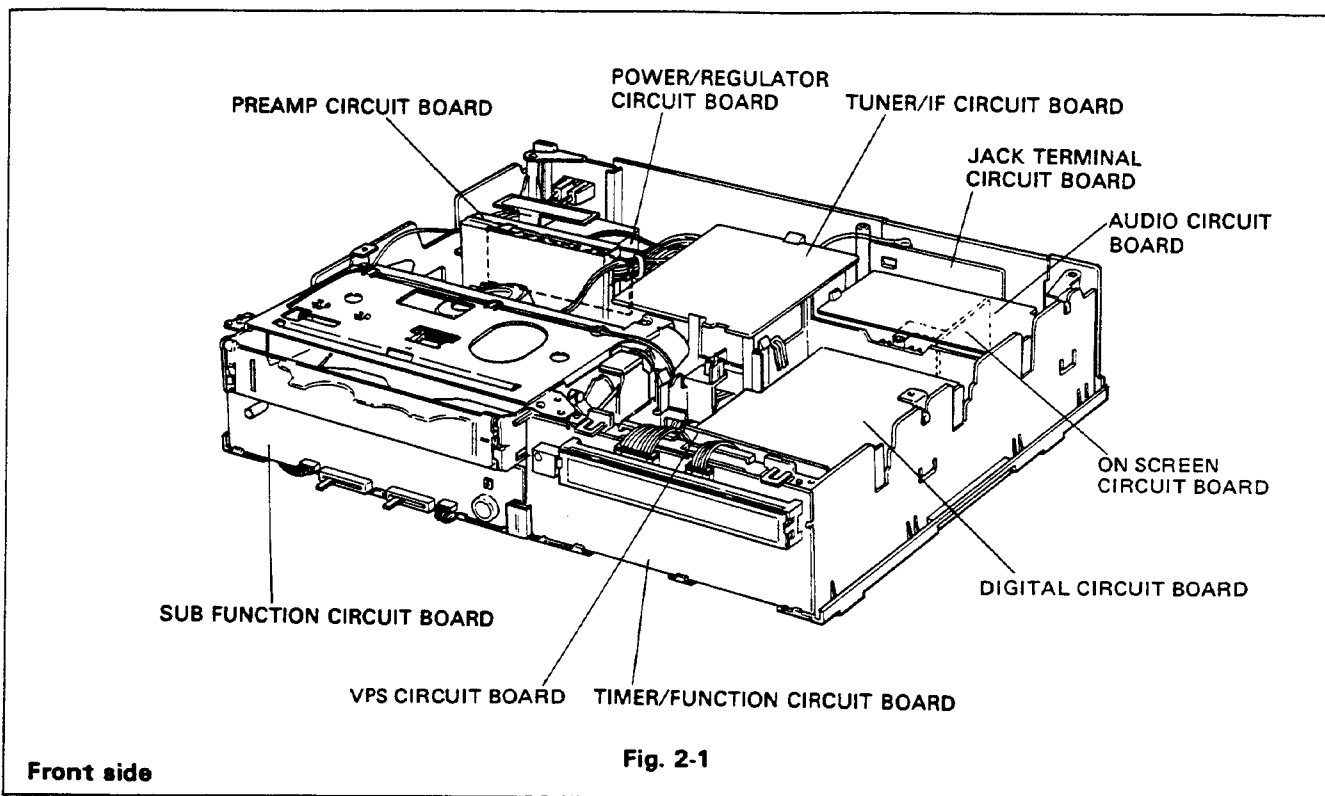
- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove three screws (3) on the bottom of the front panel.
- (3) Remove two screws (4) on the top of the front panel.
- (4) Release tabs (5).
- (5) Release tabs (6), and tilt the front panel forward to remove.



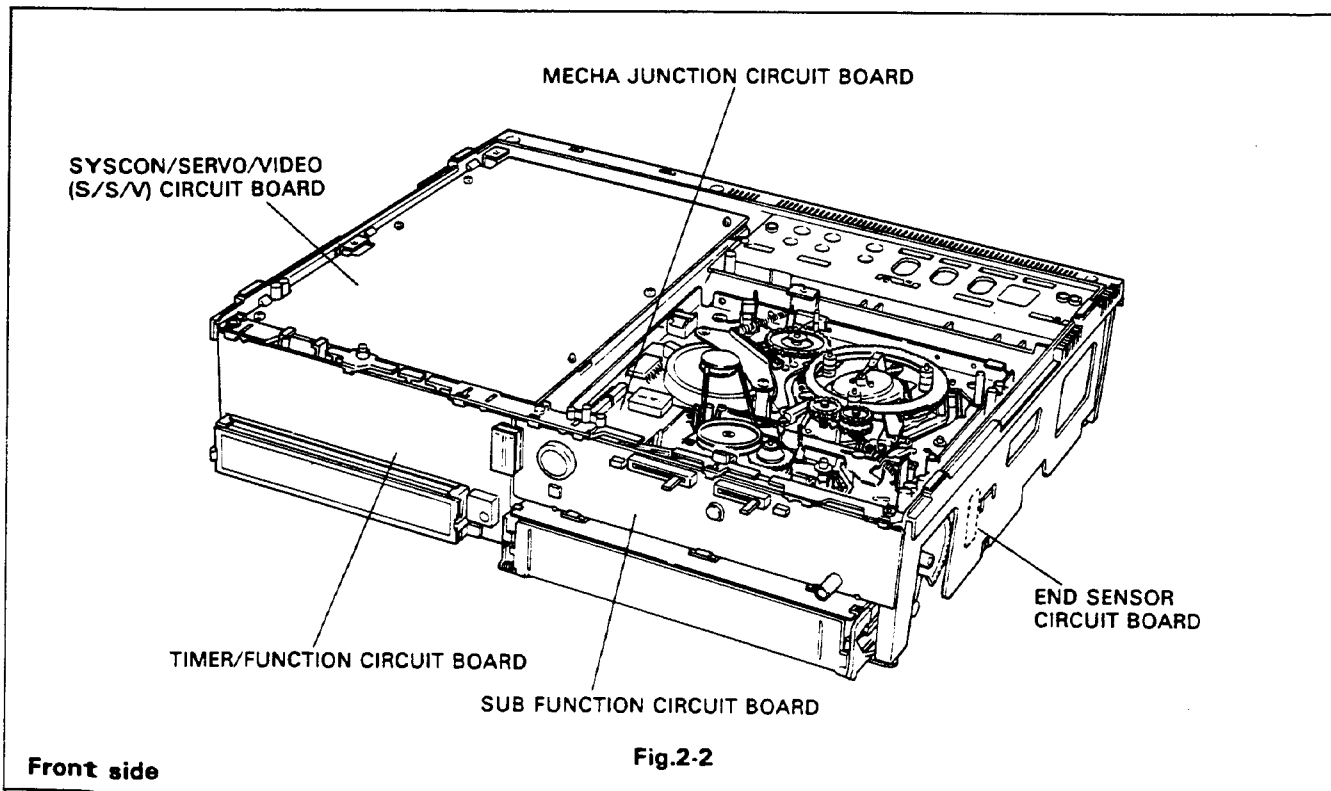
Note: After releasing tabs (6), be sure to handle the tab set very carefully; Otherwise, the released tabs may return to their original locked positions.

2. CIRCUIT BOARD LOCATIONS

2-1. TOP VIEW



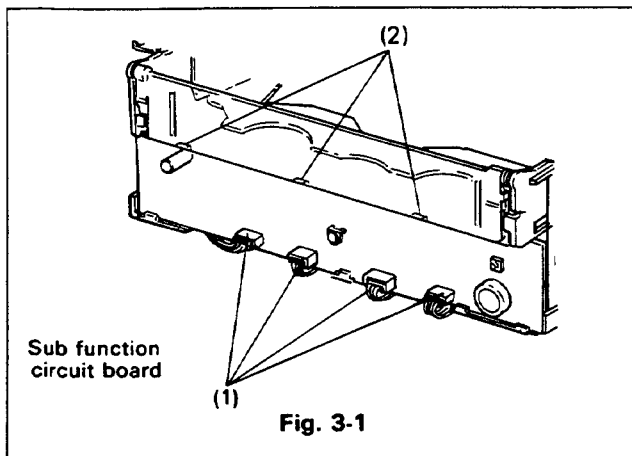
2-2. BOTTOM VIEW



3. REMOVING THE CIRCUIT BOARDS

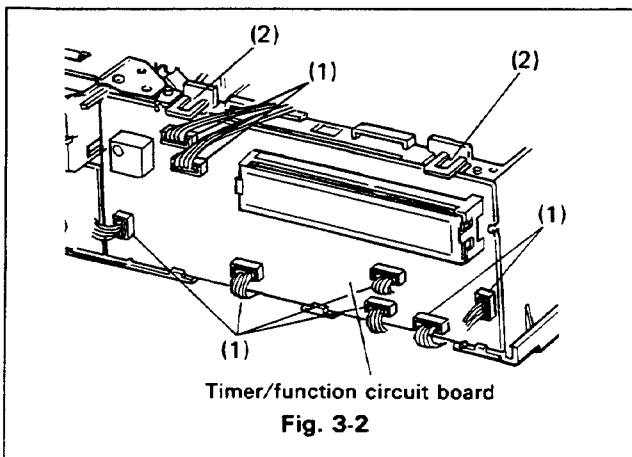
3-1. SUB FUNCTION CIRCUIT BOARD (Figure 3-1)

- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
- (2) Disconnect five wire connectors (1) from the circuit board.
- (3) Release three tabs (2) on the top of the circuit board in the direction of the arrow, and lift the circuit board to remove.



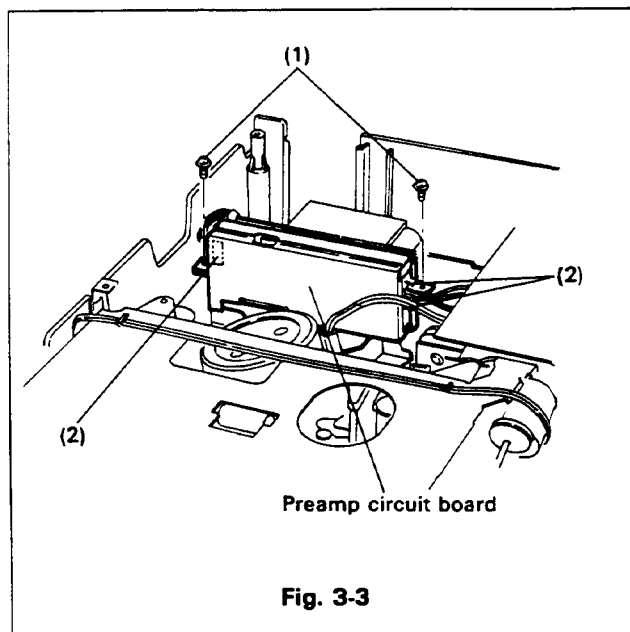
3-2. TIMER/FUNCTION CIRCUIT BOARD (Figure 3-2)

- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
- (2) Disconnect eight wire connectors (1) from the circuit board.
- (3) Release two tabs (2), and lift the circuit board to remove.



3-3. PREAMP CIRCUIT BOARD (Figure 3-3)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove two screws (1).
- (3) Disconnect three wire connectors (2) from the preamp circuit board.



Note: Be very careful not to damage the drum head circuit board when removing the preamp circuit board.

3-4. TUNER/IF CIRCUIT BOARD (Figure 3-4)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove three screws (1) from the tuner/IF circuit board.
- (3) Release two tabs (2).
- (4) Lift and tilt the tuner/IF circuit board toward the rear panel.
- (5) Disconnect the 75-ohm VHF cable (3).
- (6) Disconnect three wire connectors (4).

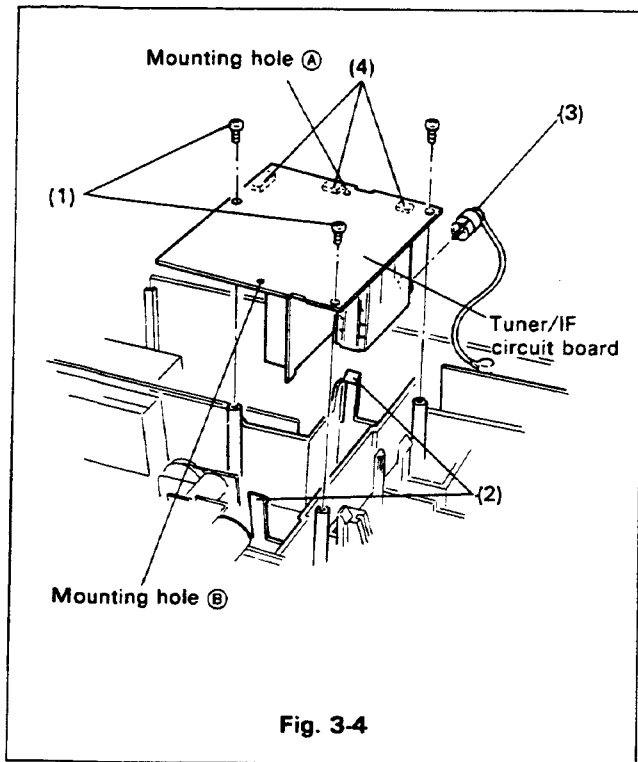
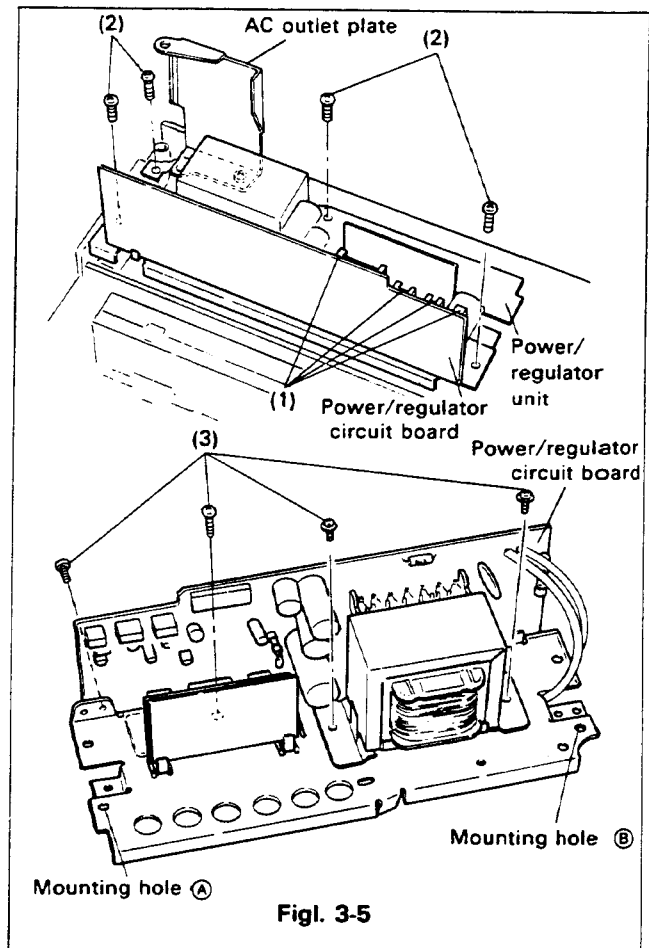


Fig. 3-4

Note: To install the circuit board, align the circuit board-mounting pins with mounting holes A and B.

3-5. POWER/REGULATOR CIRCUIT BOARD (Figure 3-5)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove the bottom cover. (Refer to Item 1-2.)
- (3) Remove the tuner/IF circuit board. (Refer to Item 3-4.)
- (4) Disconnect four wire connectors (1) from the power/regulator circuit board.
- (5) Remove four screws (2).
- (6) Lift the power/regulator unit together with the AC outlet plate to remove.
- (7) Remove four screws (3) to release the power/regulator circuit board from the base.

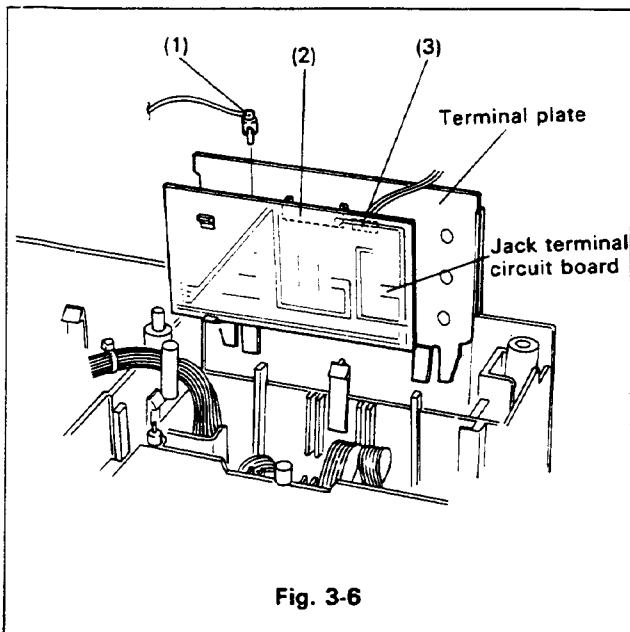


Figl. 3-5

Note: To install the power/regulator unit, align the mounting pins with mounting holes A and B.

3-6. JACK TERMINAL CIRCUIT BOARD (Figure 3-6)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Disconnect the 75-ohm cable (1).
- (3) Disconnect wire connector (2).
- (4) Pull the terminal plate up and remove the jack terminal circuit board.
- (5) Disconnect wire connector (3).

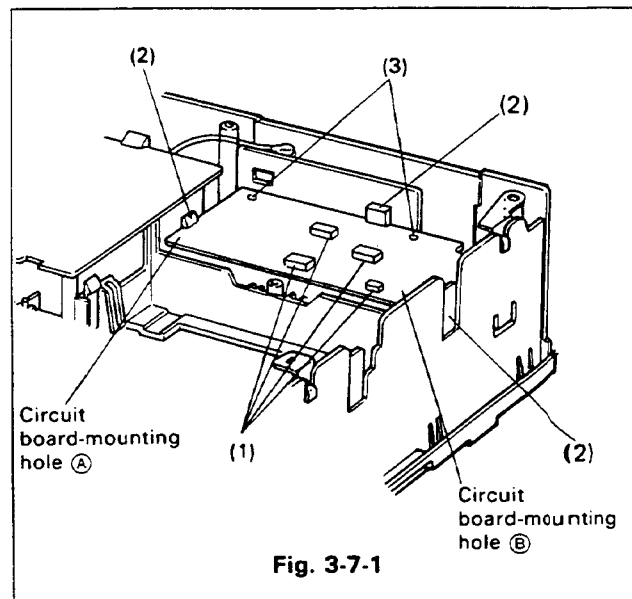


Notes:

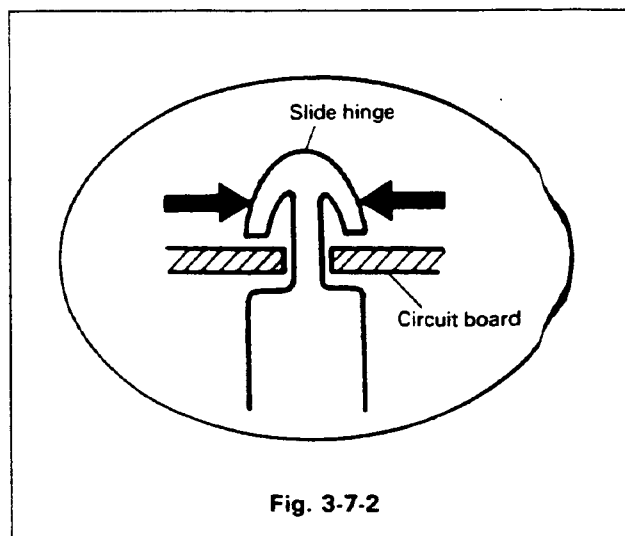
1. The jack terminal circuit board is united with the terminal plate.
2. To install the jack terminal unit, fit the terminal plate into the mounting position until it clicks in the locked position.

3-7. AUDIO CIRCUIT BOARD (Figure 3-7-1)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Disconnect four wire connectors (1) from the audio circuit board.
- (3) Release three tabs (2).
- (4) Release the circuit board from two slide hinges (3).



To install the circuit board, align the circuit board-mounting pins with mounting holes A and B.



Note: When removing the circuit board from each slide hinge, use pliers to squeeze these hinges in the directions of the arrows shown in the figure to release.

3-8. DIGITAL CIRCUIT BOARD (Figure 3-8)

- (1) Remove the top cover (Refer to Item 1-1)
- (2) Release five tabs (1).
- (3) Disconnect five wire connectors (2) from the digital circuit board.
- (4) Release the circuit board from two hinges (3).

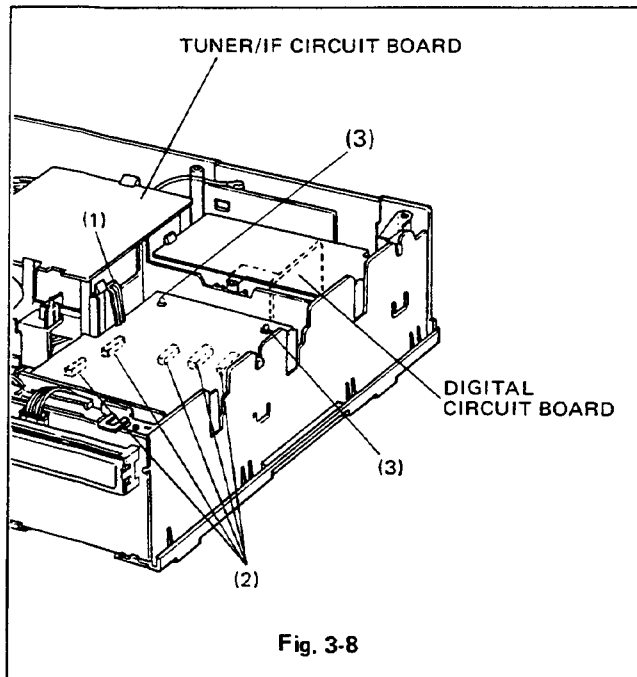


Fig. 3-8

3-10. ON SCREEN CIRCUIT BOARD (Figure 3-10)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Release the three tabs (1) on the audio circuit board.
- (3) Raise slide hinge (2) for the audio circuit board until the board is upright.
- (4) Remove the screw from clamp (3) for the on-screen circuit board.
- (5) Disconnect two wire connectors (4).

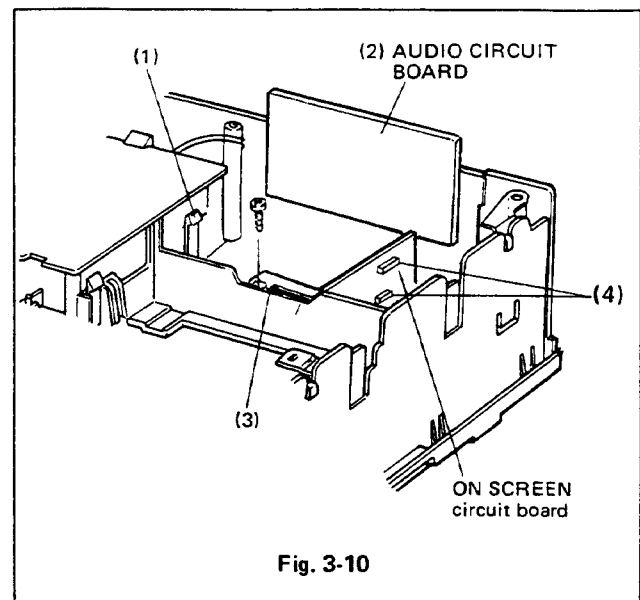


Fig. 3-10

3-9. VPS DECODER CIRCUIT BOARD (Figure 3-9)

- (1) Remove the top cover. (Refer to Item H.)
- (2) Remove pwb bracket (1) in the arrow direction.
- (3) Disconnect the three connectors (2) on the VPS decoder circuit board.

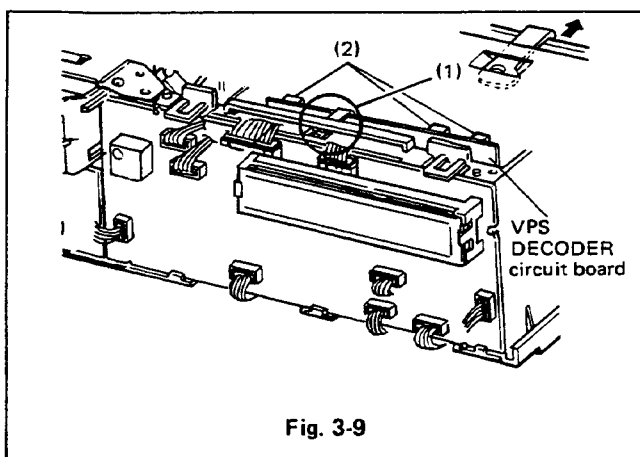


Fig. 3-9

3-11. S/S/V CIRCUIT BOARD (Figure 3-11-1)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove the bottom cover. (Refer to Item 1-2.)
- (3) Perform steps (2) and (3) in the Item 3-7, and raise the audio circuit board toward the rear panel.
- (4) Disconnect seventeen wire connectors (1) from the S/S/V circuit board from inside the VCR.
- (5) Remove five screws (2) from the S/S/V circuit board.
- (6) Release three tabs (3).
- (7) Release the circuit board from the two slide hinges (4).

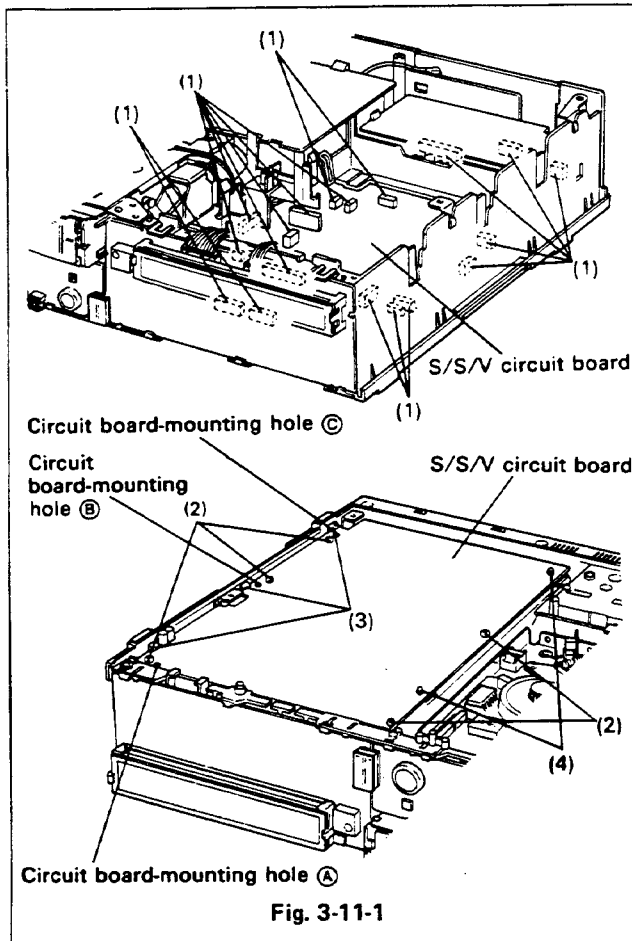


Fig. 3-11-1

To install the circuit board, align the circuit board-mounting pins with mounting holes ①, ② and ③.

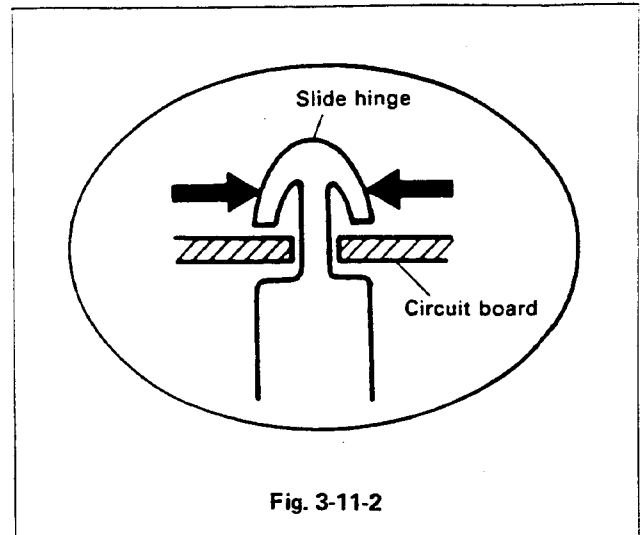


Fig. 3-11-2

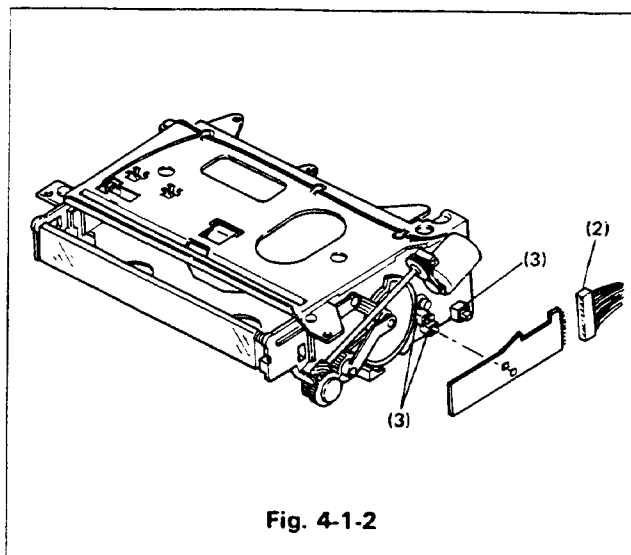
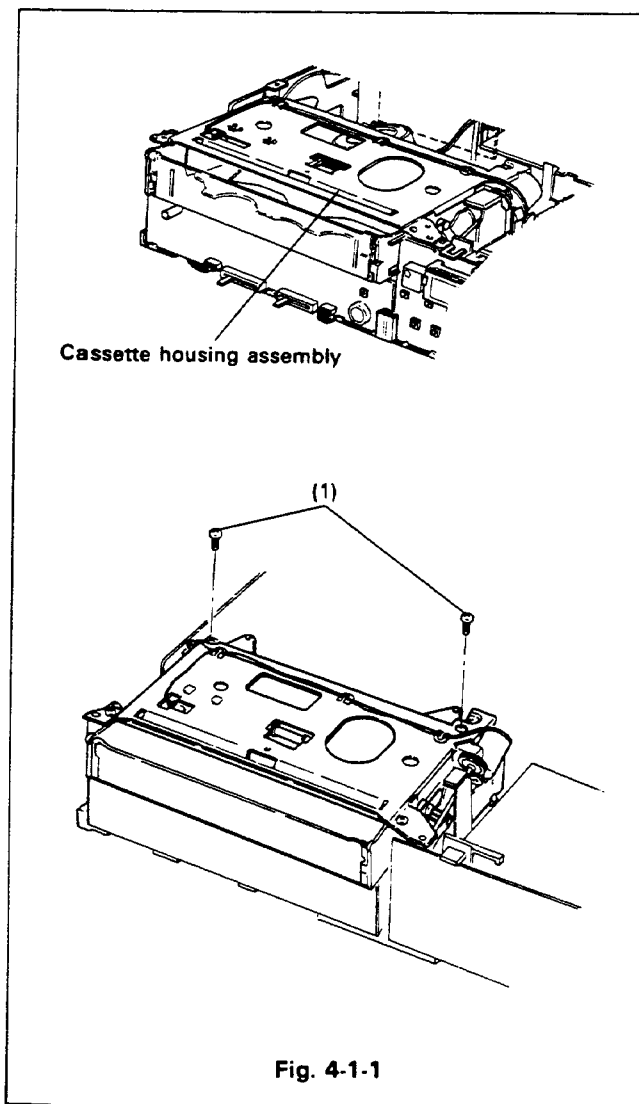
Note: When removing the circuit board from each slide hinge, use pliers to squeeze these hinges in the directions of the arrows shown in the figure to release.

4. REMOVING THE CASSETTE MECHANISM

4-1. REMOVING THE CASSETTE HOUSING ASSEMBLY (Figures 4-1-1, 4-1-2)

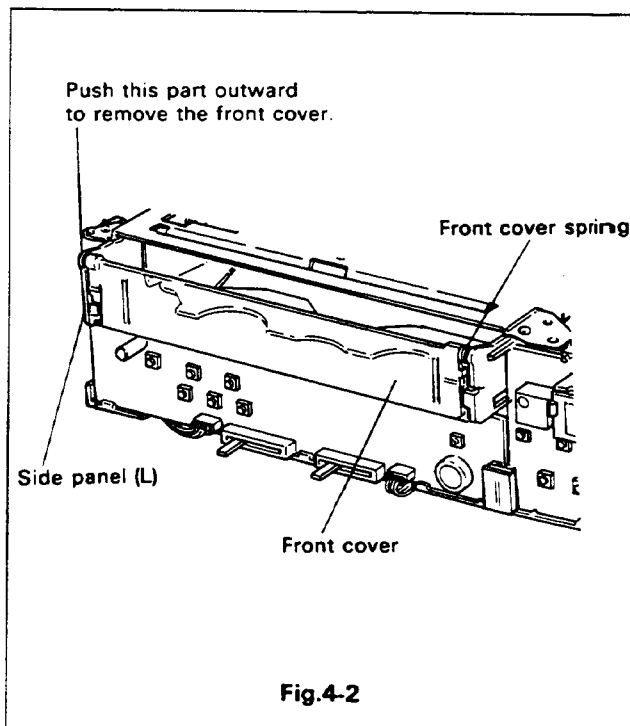
- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3.)
- (2) Remove two screws (1). Pull up the rear part of the cassette housing assembly and pull backwards 4-5 mm carefully to release the claw of the front side of the cassette housing assembly from the chassis. Then carefully pull it out upwards.
- (3) Disconnect connector (2).
- (4) To remove the cassette loading circuit board, release four tabs (3).

Note: The removed screws should be used again to reinstall the cassette housing assembly. Never use screws other than the ones originally removed.



4-2. FRONT COVER (Figure 4-2)

- (1) Push the front cover into the cassette housing.
- (2) Push the side panel (L) outward, and remove the front cover, together with the front cover spring.



4-3. MODE SENSOR CIRCUIT BOARD (Figure 4-3)

- (1) Remove the bottom cover. (Refer to Item 1-2.)
- (2) Remove screw (1).
- (3) Disconnect wire connector (2) to remove the mode sensor circuit board.

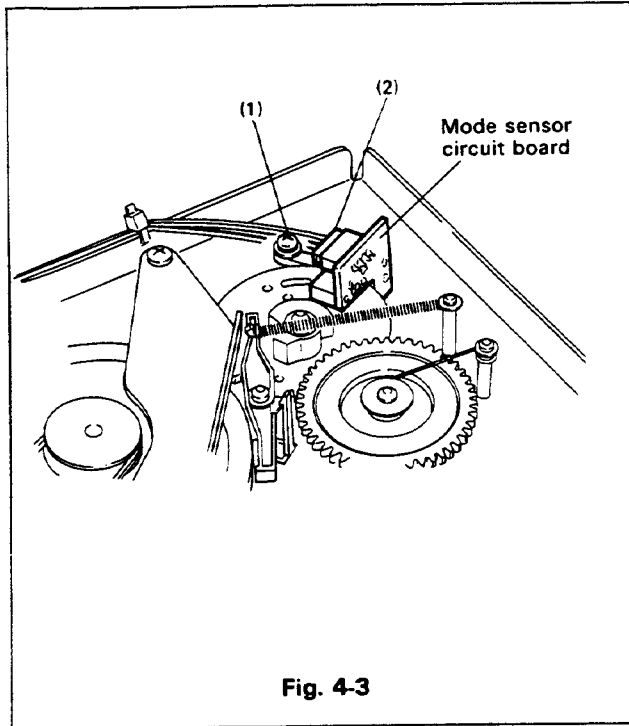


Fig. 4-3

4-4. END SENSOR CIRCUIT BOARD (Figure 4-4)

- (1) Remove the top cover. (Refer to Item 1-1.)
- (2) Remove the cassette housing assembly. (Refer to Item 4-1.)
- (3) Remove the solder from the two lead wires (1) of the REC Safety Switch located under the front cover.
- (4) Release tab (2) toward the bottom, and lift the end sensor circuit board to remove.

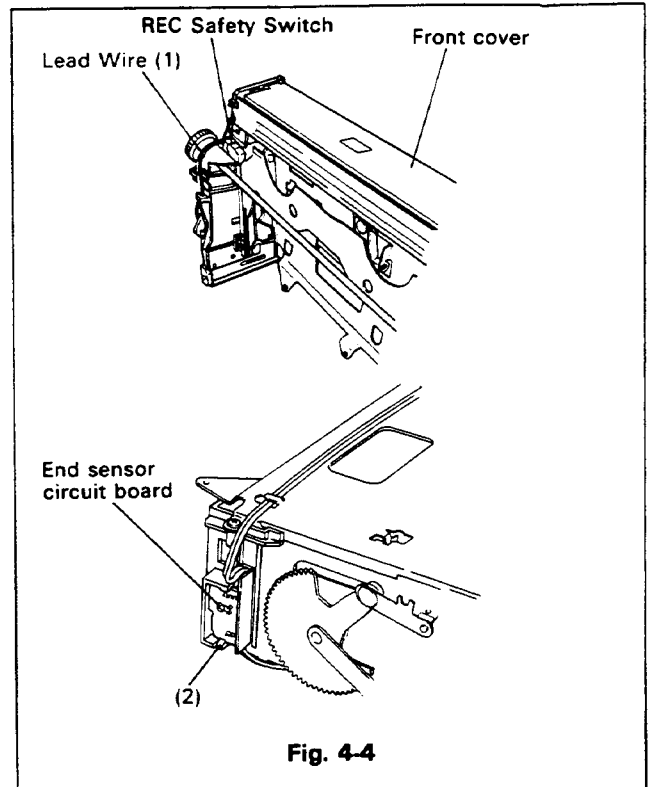


Fig. 4-4

4-5. MECHA JUNCTION CIRCUIT BOARD (Figure 4-5)

- (1) Remove the bottom cover. (Refer to Item 1-2.)
- (2) Disconnect flat cable (1).
- (3) Disconnect connector (2) and junction (3).
- (4) Release tabs (4) and lift the circuit board a little to remove.

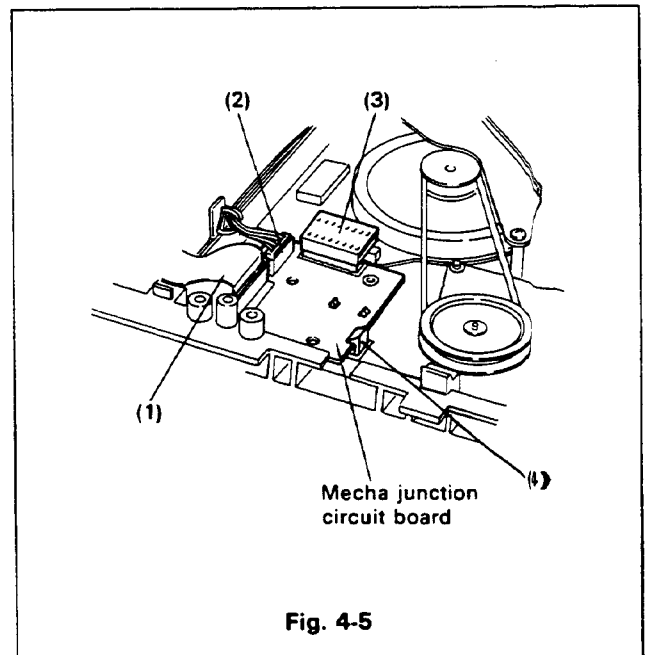
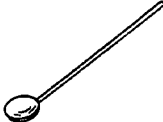
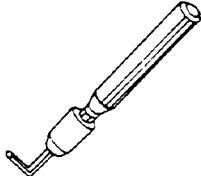
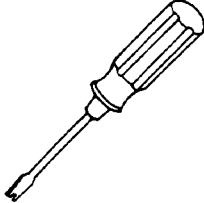
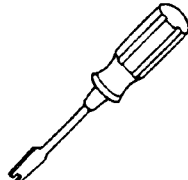
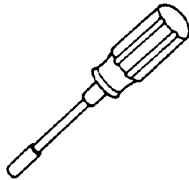


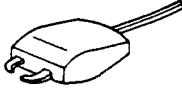
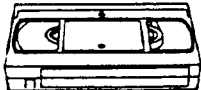

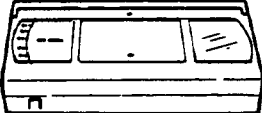
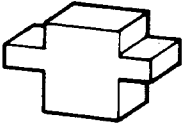
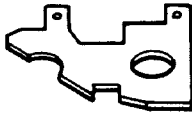
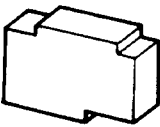



Fig. 4-5

SECTION 3 ADJUSTMENT

1. MECHANICAL ADJUSTMENT

1-1. SERVICING JIGS AND TOOLS

<p>J-1 Checking mirror For tape flow check and adjustment procedures</p>  <p>16950871</p>	<p>J-2 Hexagonal driver For guide roller screw</p>  <p>16951281</p>	<p>J-3 Adjustment driver For guide roller</p>  <p>16951291</p>	<p>J-4 Adjustment driver For tapered pin of ACE head</p>  <p>16951301</p>
<p>J-5 Box driver For ACE head, guide pole and reverse pin</p>  <p>16951311</p>	<p>J-6 Alignment tape (MH-2) Overall adjusting of picture quality and tracking MH-2 79V20196</p> 	<p>J-7 Cleaning liquid (isopropyl alcohol) cleaning cloth for cleaning</p>  <p>NOTE* 16950001</p>	<p>J-8 Head demagnetizer demagnetizing audio heads</p>  <p>NOTE*</p>
<p>J-9 Cleaning cassette tape For cleaning video heads</p>  <p>NOTE*</p>	<p>J-10 <ul style="list-style-type: none"> ● Torque meter (600g/cm) Ass'y 79V20199 ● Torque meter 79V20200 (600g/cm) ● Torque meter adaptor 79V21508 (Substitute 79V20201) </p> 	<p>J-11 Back tension cassette gauge 79V20202</p> 	<p>J-12 Height Gauge AM-2 Jig</p>  <p>16951431</p>
<p>J-13 Master Plane B Jig</p>  <p>16951381</p>	<p>J-14 Height Gauge BM-2 Jig</p>  <p>16951441</p>	<p>J-15 Cassette tape (E-120) For checking tape path</p>  <p>NOTE*</p>	

Note: This item not available from parts dept.

Fig. 1-1

1-2. MECHANISM ASSEMBLY

1-2-1 Removing the mechanism assembly (Figure 1-2)

- (1) Remove the top cover and front panel. (Refer to Items 1-1 and 1-3)
 - (2) Remove the tuner/IF circuit board. (Refer to Item 3-4.)
 - (3) Remove the preamp circuit board. (Refer to Item 3-3.)
 - (4) Remove the cassette housing assembly. (Refer to Item 4-1.)
 - (5) Disconnect wire connector and drum heater (yellow) of the rotary drum assembly.
 - (6) Remove two screws of the lead wires with ground lug.
 - (7) Disconnect two connectors from the ACE head assembly.
 - (8) Disconnect connectors from the full erase head.
 - (9) Disconnect the flat cable from the mecha junction circuit board.
- Note:** The removed screws should be used again to reinstall the cassette housing assembly. Never use screws other than removed ones.

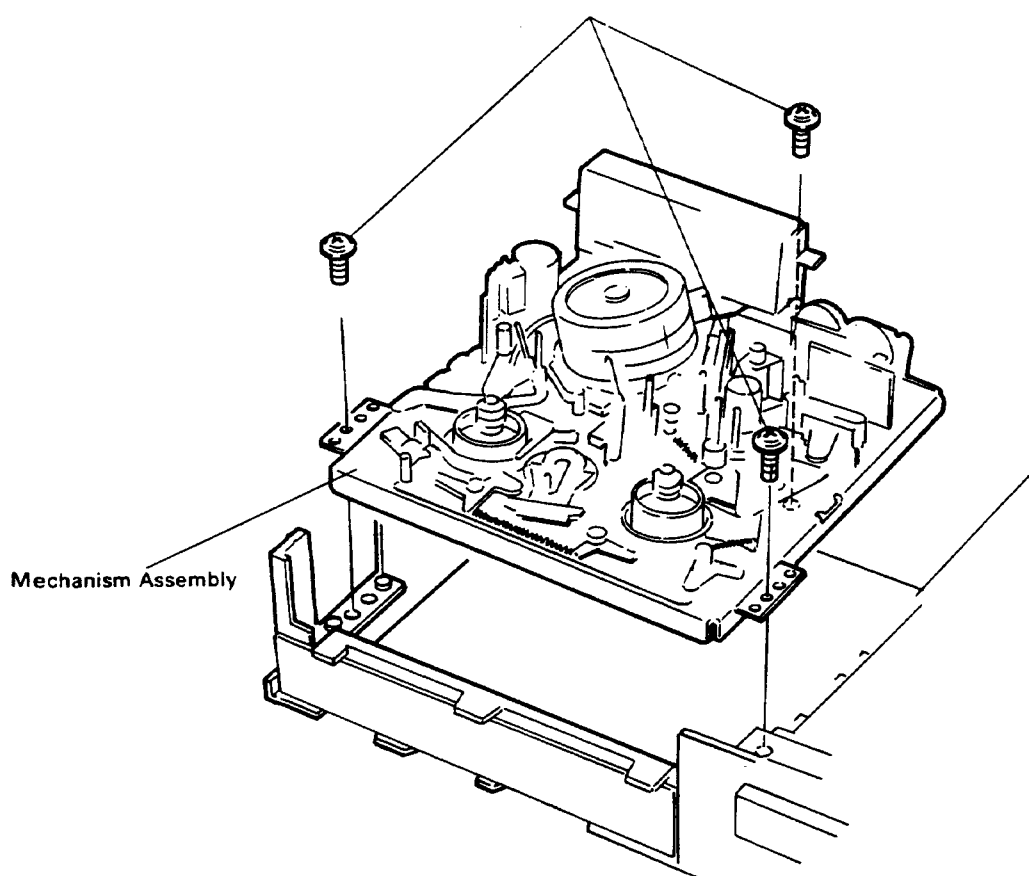
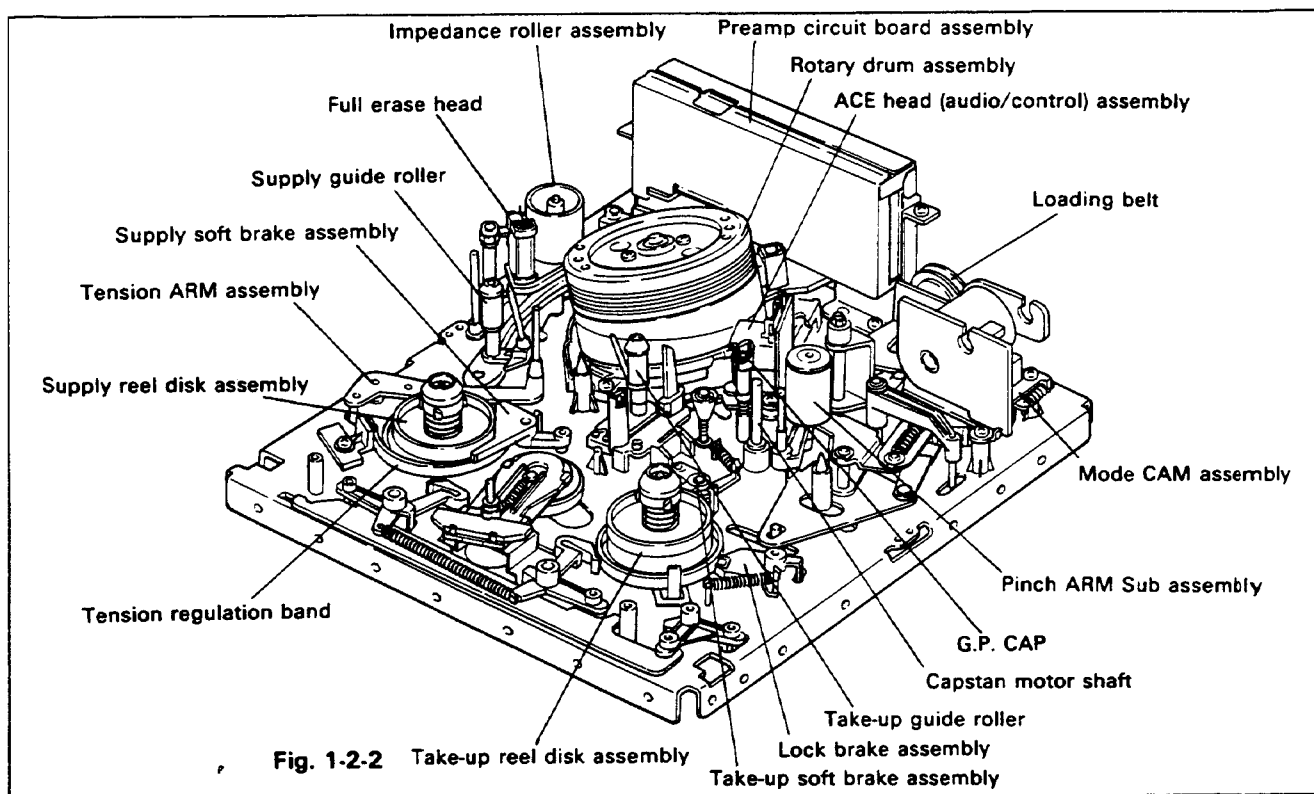


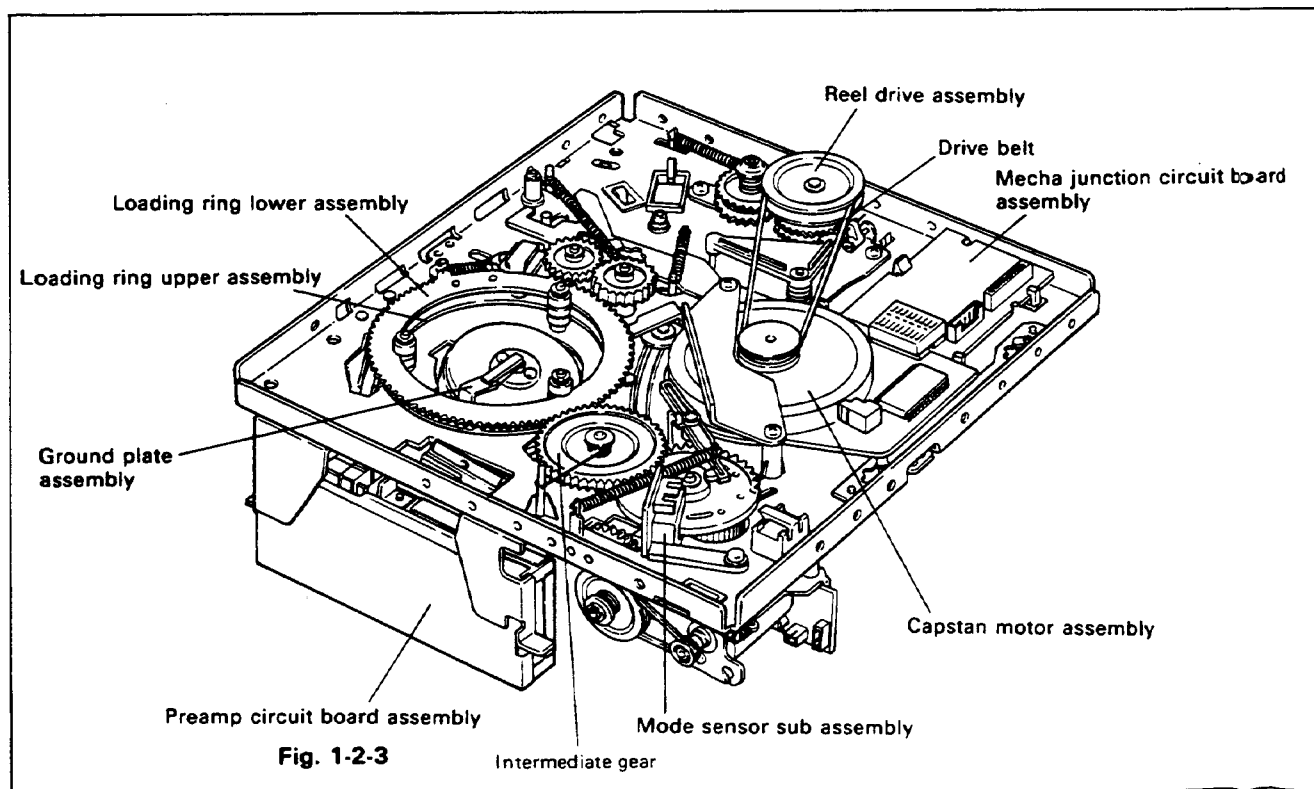
Fig. 1-2

1-2-2 Mechanism parts locations

Top view



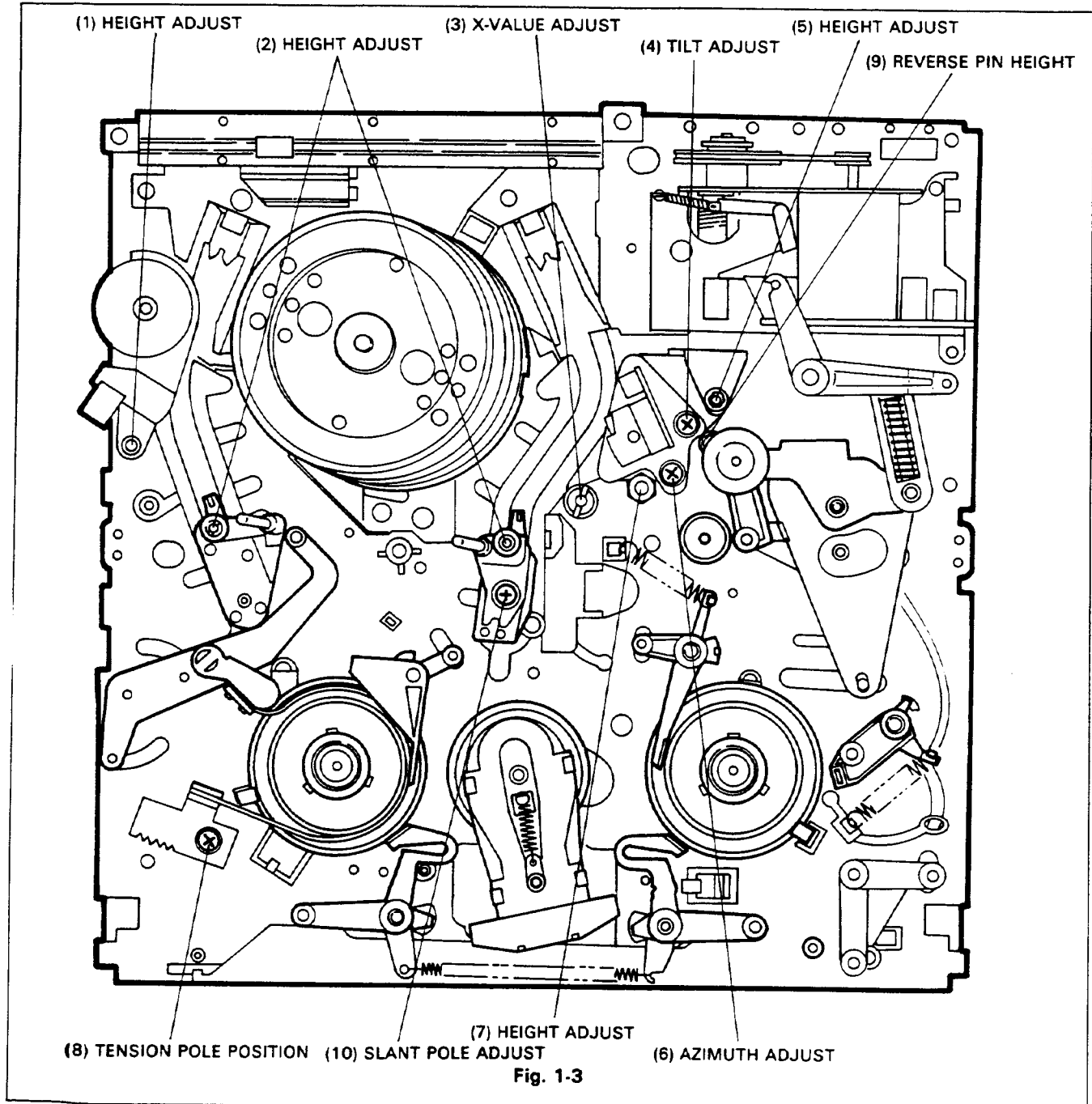
Bottom view



1-3. BEFORE DISASSEMBLING PARTS ON THE CHASSIS (Figure 1-3)

Do not turn the adjusting screws shown below when removing adjacent parts.

- | | |
|---|--|
| (1) Supply guide pole height adjusting nut. | (6) ACE Head azimuth adjusting screw. |
| (2) Take-up/supply guide roller height adjusting screw. | (7) Take-up guide pole height adjusting nut (cap per). |
| (3) ACE Head X value adjusting nut. | (8) Tension band fixing screw. |
| (4) ACE Head tilt adjusting screw. | (9) Reverse pin height adjusting nut. |
| (5) ACE Head height adjusting nut. | (10) Slant pole adjusting screw. |

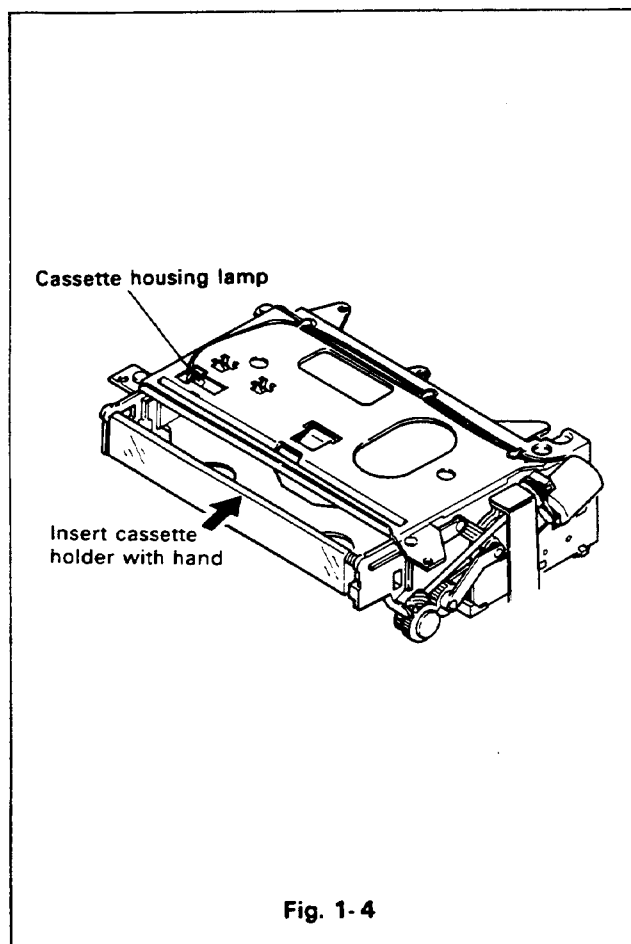


Note: When replacing parts and removing the nylon nut for adjustment, be sure to use the removed nylon nut.

1-4. BEFORE ADJUSTING THE MECHANISM (Figure 1-4)

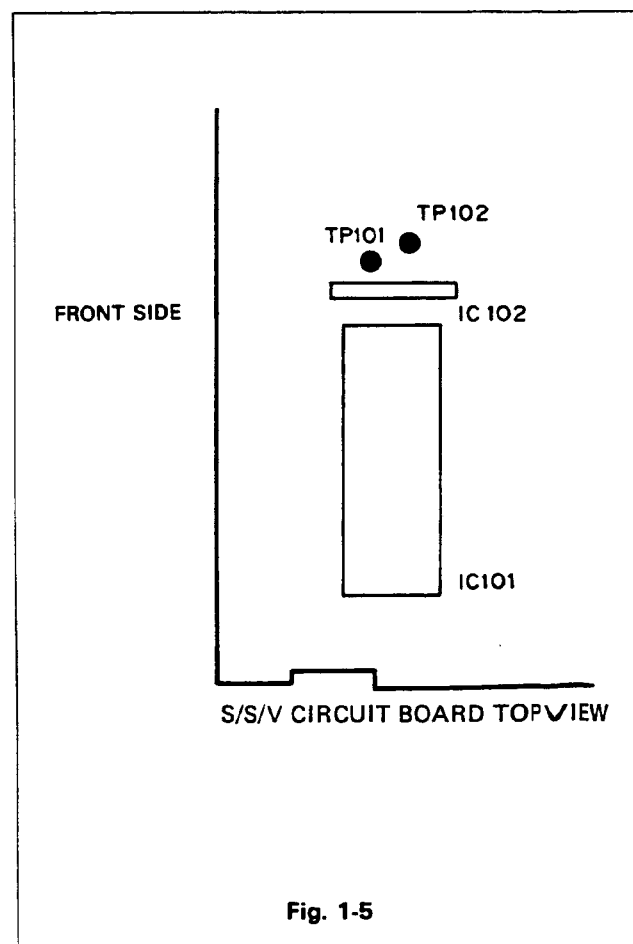
"Adjustment procedures" have been written as a guide to achieve proper operation after replacing the mechanism parts (when required by normal wear and tear or accidental damage).

Since the mechanism adjustment procedures are closely related to the adjustment of the electrical circuitry, and form the basis of the electrical circuitry adjustment procedures, carefully follow the mechanism procedures by observing the proper precautions.



1-5. SERVICING PRECAUTIONS (Figure 1-5)

- (1) Pay special attention to how and where the unit is placed when removing the exterior casing of the unit, and when servicing with the circuit boards removed.
- (2) Prevent the loss of screws by putting every removed screws into a container stored at one location.
- (3) Since the surface area of the left and right sides of the unit is small, take special precautions when working with the unit standing on its side so that it will not fall over.
- (3) When operating without using a cassette, short TP101 and TP102 on the S/S/V circuit board shown in Fig. 1-5 with a clip.



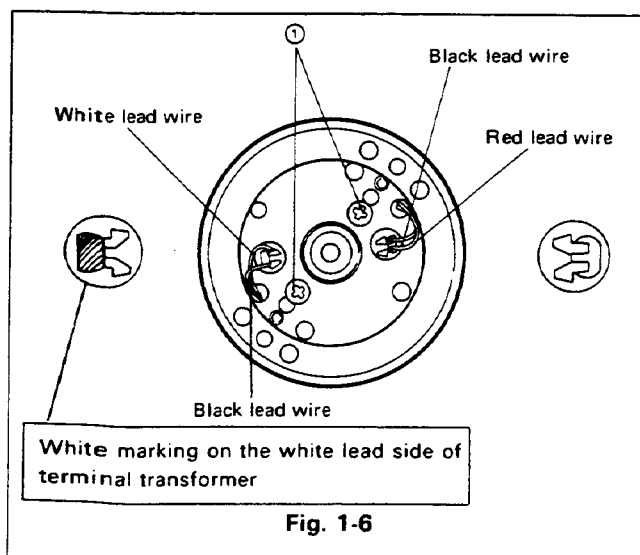
1-6. REPLACEMENT OF UPPER ROTATING DRUM ASSEMBLY (Figure 1-6)

- (1) Remove the solder from the four lead wires that connect the video heads to the terminal transformer. (Perform this removal quickly so as not to damage the insulation of the lead wires.)
- (2) Remove two screws ①, then lift the rotating drum assembly upward and remove it.
- (3) Use alcohol (isopropyl) to clean the flange surface of the lower drum and the surface on the new rotating drum assembly that will come into contact with the flange. Position the rotating drum assembly so that the wire is aligned with the white marking on the shaded area of the terminal transformer, as shown in Fig. 1-6, then carefully slide it down into place.

Note:

- 1) Be sure not to touch the head tips, or strike and damage them.
- 2) If the rotating drum assembly should become hooked on some obstruction before it has been slid completely into place, do not attempt to force it. Remove it and try again.

- (4) Tighten two screws ① alternately, then solder the four lead wires to their correct positions on the terminal transformer, and make sure that all connections are solid and secure.
- (5) After the rotating drum assembly has been replaced, be sure to carry out the following checks and adjustments.
 - 1) Control head phase adjustment (refer to Section 3-4)
 - 2) Playback switching point adjustment (refer to Section 3-1).
 - 3) Checking and adjustment of entire video and audio systems (refer to Sections 4-2, 4-3 and 4-5).

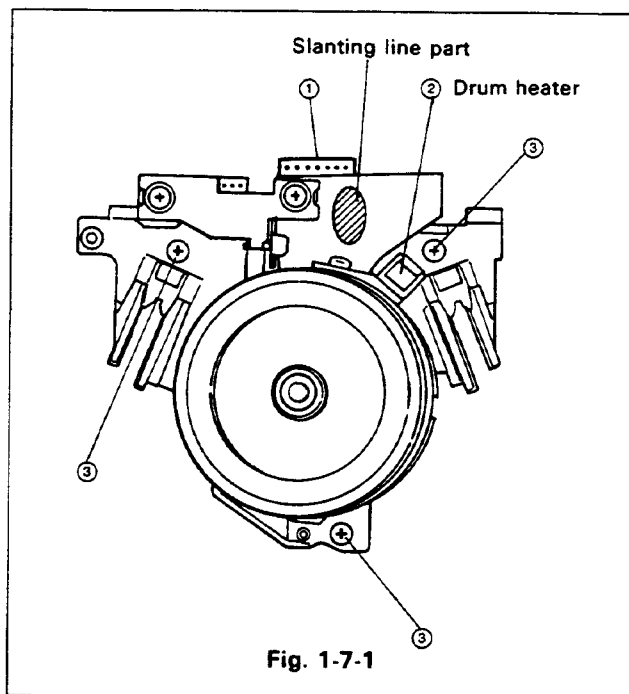


1-7. REPLACEMENT OF DRUM ASSEMBLY (Figure 1-7)

- (1) Remove the preamp circuit assembly. (Refer to Item 3-3.)
- (2) Remove the drum assembly connector ① and drum heater ②. (When removing connector ① hold down the slanting line part of the print substrate.)
- (3) Remove the three screws ③ and then remove the drum assembly.

Note: Do not touch the drum head tips or damage the drum assembly during this procedure.

- (4) Follow the above instructions in reverse order to install the drum assembly.



- (5) After replacing, check and adjust as follows.
 - 1) Adjust tape path. (Refer to Section 2.)
 - 2) Adjust for compatibility. (Refer to Section 3.)
 - 3) Make necessary adjustments to the servo system, video system, and audio system. (Refer to Sections 4-2, 4-3 and 4-5.)

NOTE

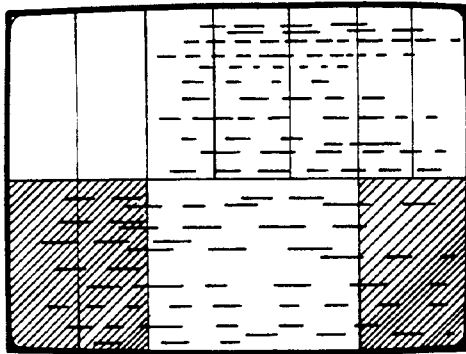
The following items must be checked after replacing the drum assembly.

When you have replaced the drum assembly of the unit that do not have the capacitor *C654 0.022 μ F on the PWB S/S/V or S/S/A/V, make sure whether there is a phenomenon described as follows. (Refer to the illustration below.)

In some cases, the noise with colored dots appears on the entire picture screen as shown in the illustration. In this case add a ceramic capacitor 0.022 μ F between the pin (3) and pin (4) of the drum motor connector CN604 on the PWB S/S/V or S/S/A/V.

The exactly same phenomenon may possibly appear when you have replaced the PWB S/S/V or S/S/A/V, cure it in the same manner as above.

***Note:** C654 is the capacitor connected between the pins (3) and (4) of the connector CN604 on the PWB S/S/V or S/S/A/V.



(6) Handling of Service Drum Package

Remove the drum from the inner box as shown in the figure below. Remove the three black screws from inside of the box, remove the board, and then remove the drum assembly.

Note:

The drum assembly is precisely adjusted. Handle carefully to prevent it from becoming dirty, scratched, damaged or deformed in any way.

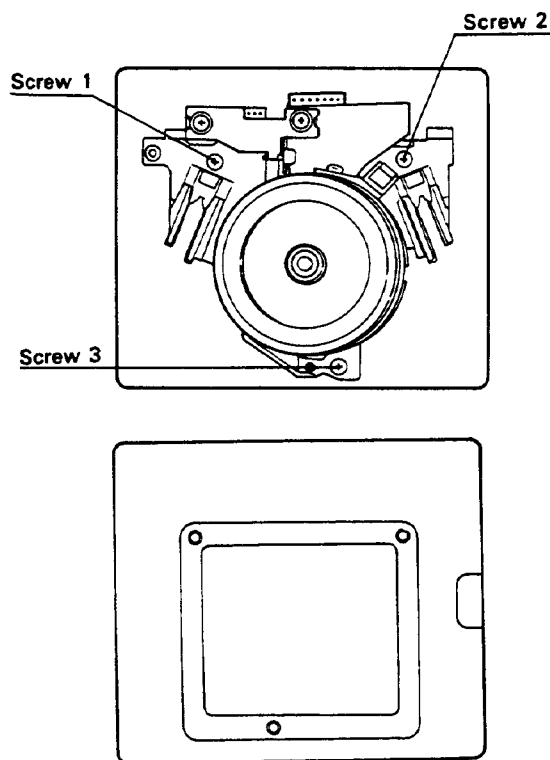


Fig. 1-7-2

1-8. REPLACEMENT OF GROUND PLATE (Figure 1-8)

1. After first placing the unit on its side, open the bottom of the unit and remove the screw ①.
2. Use the screw ① to attach the ground plate so that its contact area is aligned with the center of the drum assembly shaft.

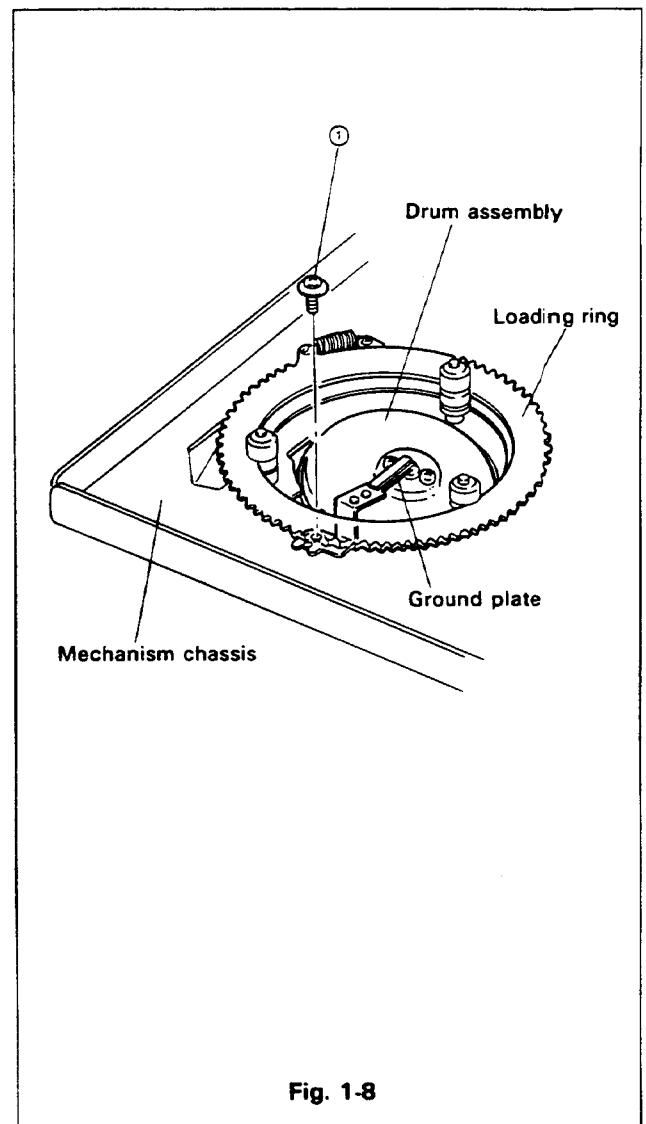


Fig. 1-8

1-9. AUDIO/CONTROL HEAD (Figure 1-9)

- (1) Remove connectors ① and ② from the ACE head circuit board. (Remove wires from clumper ① first.)
- (2) Use a box driver (J-5) to remove nylon nut ②.
- (3) Rotate the ACE head assembly clockwise, so that it is slightly away from the taper pin, then pull upwards from the head pivot. Be careful during this procedure, because the (TC) spring applies pressure to the assembly.
- (4) Replace the ACE head assembly and mount it into position by following the above procedure in reverse.
- (5) After the ACE head assembly has been replaced, adjust the height of the new ACE head assembly.
- (6) To adjust the height of the ACE Head, first place the Master Plane B Jig (J-13) on the chassis. Place the Height Gauge BM-2 Jig (J-14) on J-13 with the surface marked with an "H" facing up, and use the nylon nut box driver (J-5) to adjust to the same height as part A. Also, adjust the height of the tapered pin by following the same procedure as for the ACE Head. Use adjustment driver (J-4) to adjust to the same height as part B.

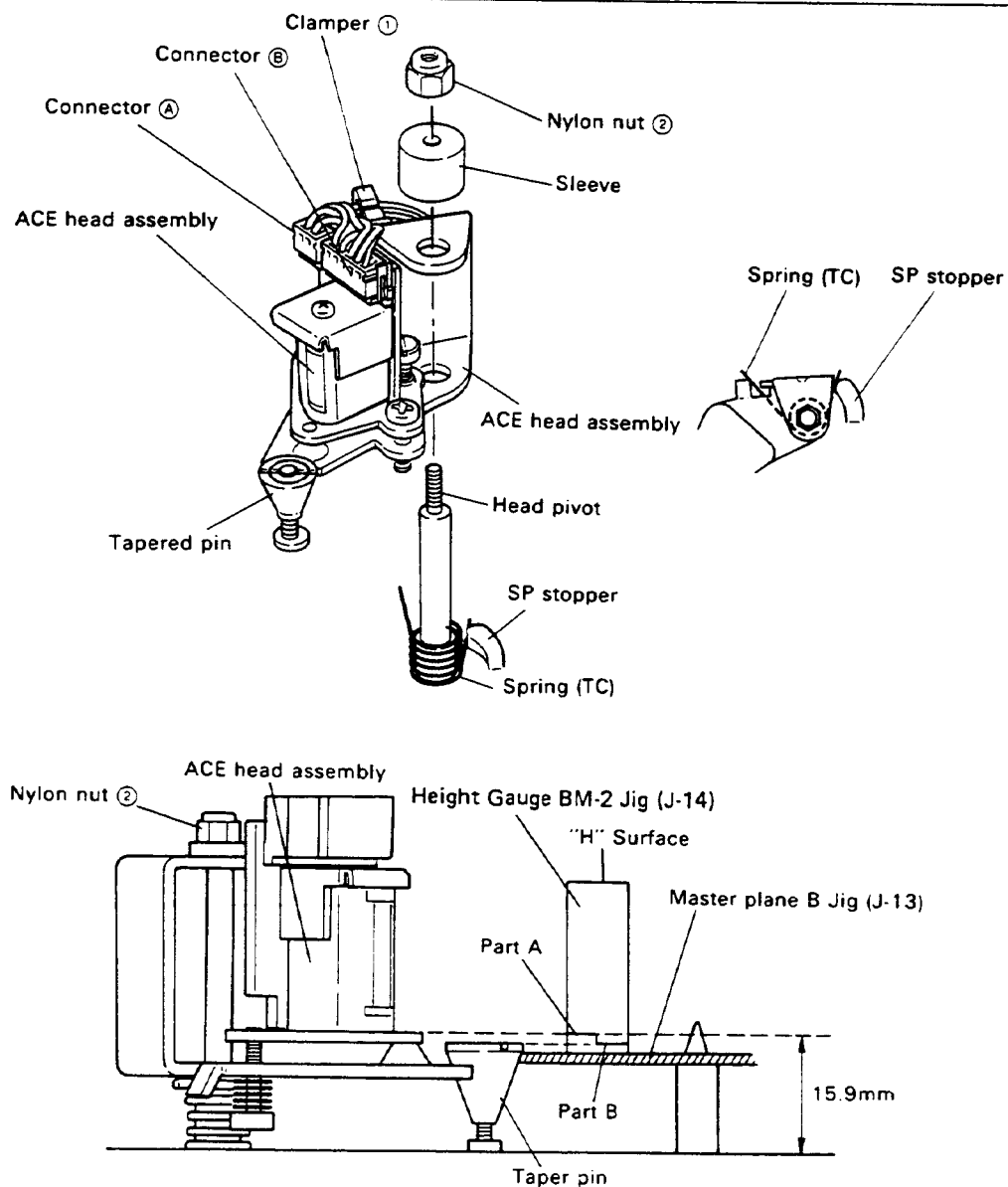


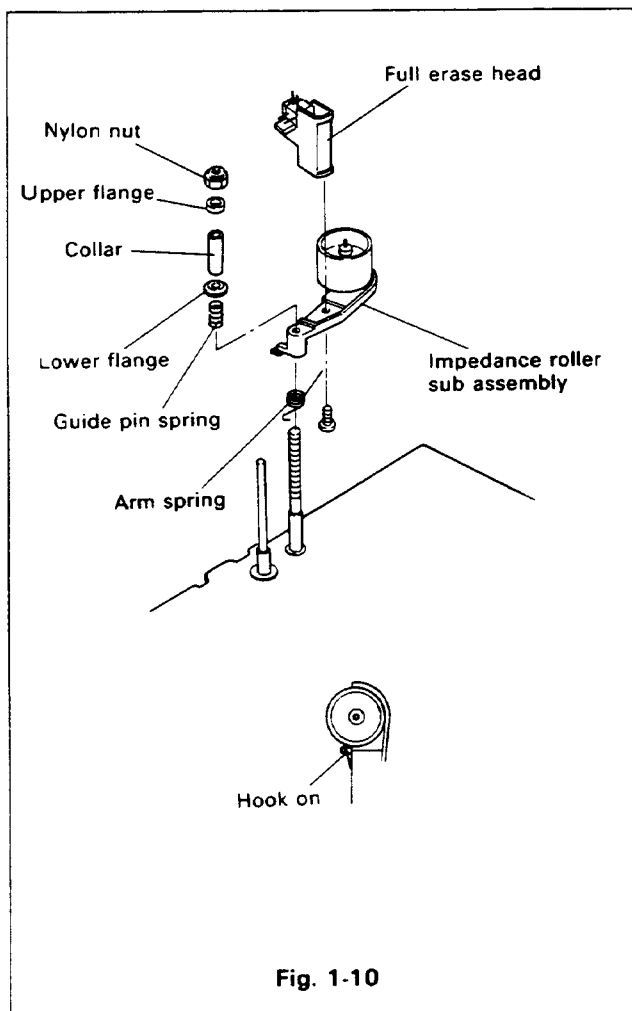
Fig. 1-9

1-10. FULL ERASE HEAD (Figure 1-10)

- (1) Remove the connector from the full erase head.
- (2) First remove the nylon nut, then remove the upper flange, collar, lower flange, guide pin spring, and arm spring.
- (3) Remove the impedance roller Sub assembly upwards.
- (4) Remove the screw that secures the full erase head from underneath the impedance roller arm. Then remove the full erase head itself.
- (5) Replace the full erase head and mount it into position, following the above procedure in reverse.

1-11. IMPEDANCE ROLLER SUB ASSEMBLY (Figure 1-10)

- (1) Remove the nylon nut, the upper flange, collar, lower flange, guide pin spring, and arm spring.
- (2) Remove the impedance roller Sub assembly upwards.
- (3) Replace the impedance roller Sub assembly and mount it into position by following the above procedure in reverse.

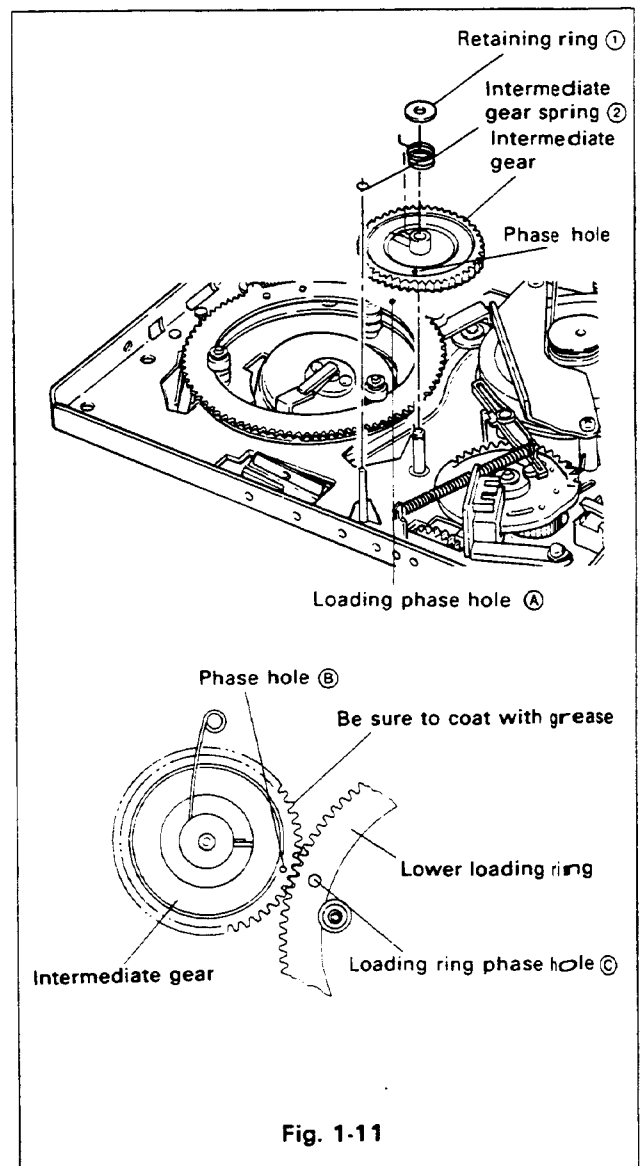


1-12. INTERMEDIATE GEAR (Figure 1-11)

- (1) Remove the retaining ring ①. Then remove intermediate gear spring ②.
- (2) Remove the intermediate gear upwards.
- (3) Replace intermediate gear and mount it into position by following the above procedure in reverse.

Notes:

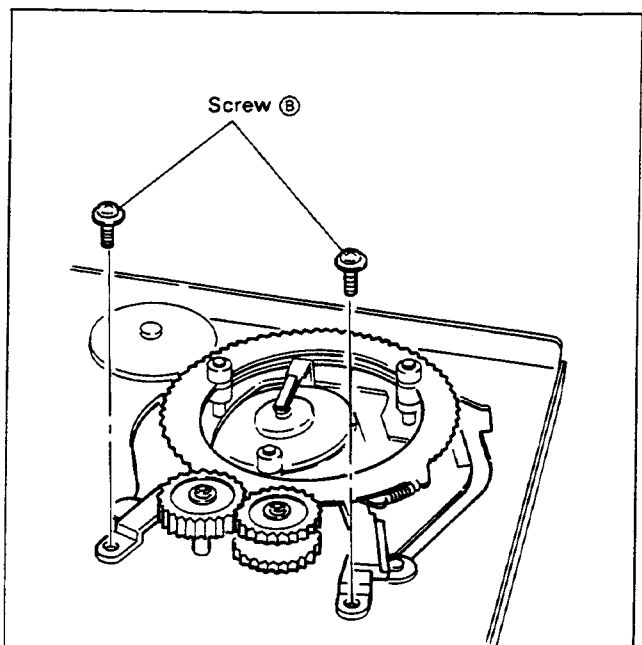
1. As shown in Fig. 1-11, when loading phase holes ① of the upper and lower loading rings are aligned, attach intermediate gear so that the phase hole ② of intermediate gear and phase hole ③ of the loading ring are facing each other, as shown in Fig. 1-11.
2. Be sure that intermediate gear spring ② is firmly secured to the lock of the intermediate gear.



1-13. S SLANT BASE/TU SLANT BASE SUB ASSEMBLY (Figure 1-12)

- (1) Remove the preamp circuit board assembly (Refer to Item 3-3 of Section 2.)
- (2) Remove connector ① of the drum assembly and drum heater ②. (Press the shaded area down with your fingers when replacing connector ① so as not to damage the printed circuit board. When attaching connector ①, be sure to support underneath the circuit board with your fingers.)
- (3) Remove the three screws ① of the drum assembly, then remove the drum assembly upwards. (Be sure not to damage the head tips during this procedure).
- (4) Remove the two screws ②, from the reverse side of the chassis.
- (5) Slide and remove the S slant base Sub assembly from the chassis.
- (6) Replace the S slant base Sub assembly and mount it into position by following the above procedure in reverse.

Note: The procedure for replacing the TU slant base Sub assembly is the same as that for removing the S slant base Sub assembly.



Reverse Side of Chassis

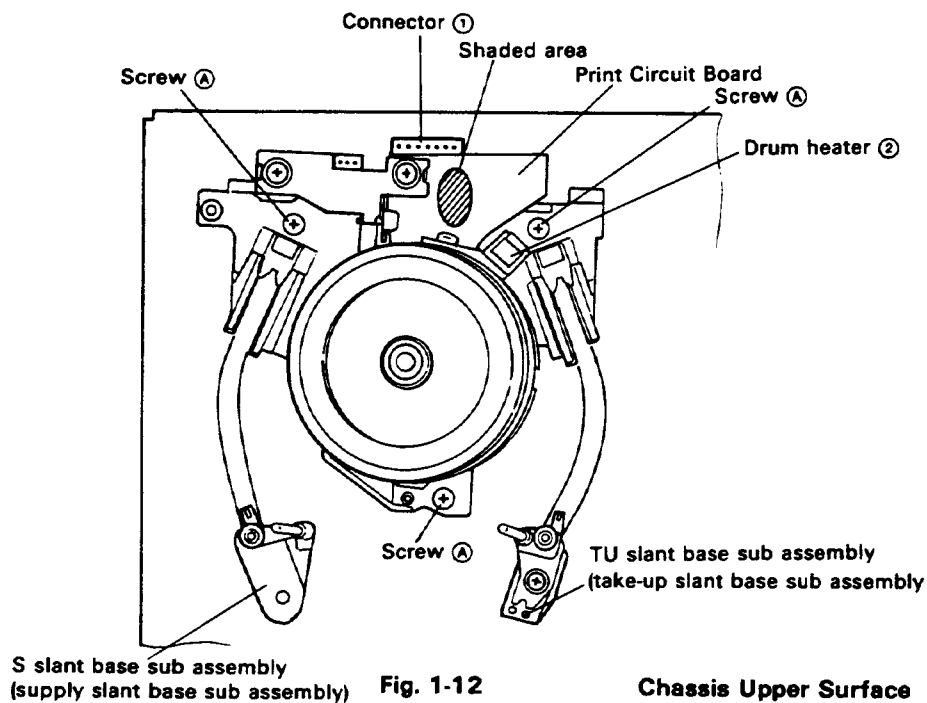


Fig. 1-12

Chassis Upper Surface

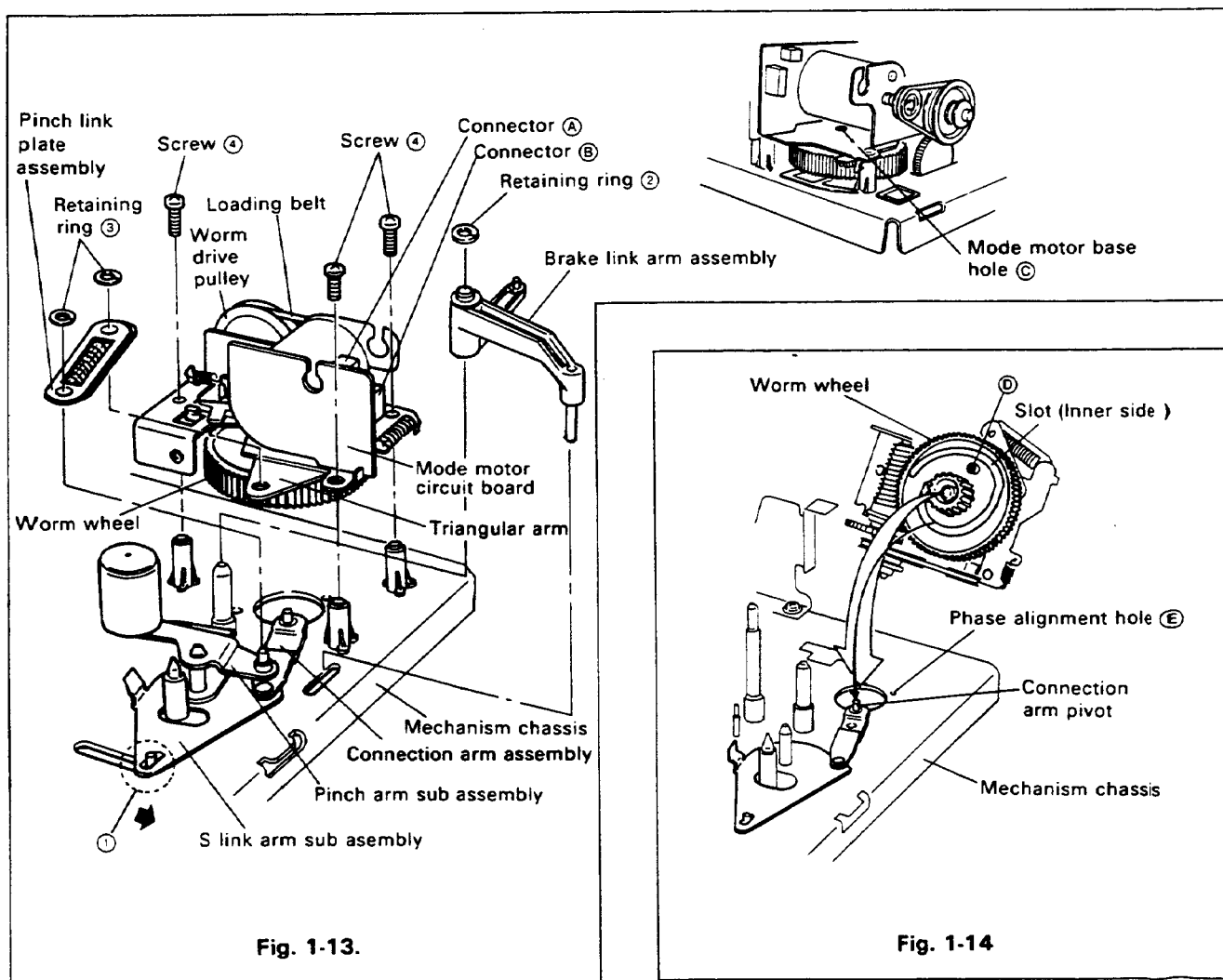
1-14. ENTIRE MODE CAM ASSEMBLY (Figure 1-13, 1-14)

- (1) Remove the loading belt of the entire mode cam assembly. Rotate the worm drive pulley by hand so that the ① part of the S link arm assembly comes as far to the right as possible as shown in Fig. 1-13. (This position is the same as for the FF or the REW mode.) Remove connectors ④ and ⑤ of the mode motor circuit board. Next, remove the wires going through the groove of the circuit board. (During this procedure, be sure to remove the connectors of the ACE head first.)
- (3) Remove retaining ring ②, and then remove the brake link arm assembly.
- (4) Remove retaining rings ③, then remove the pinch link plate assembly.

- (5) Remove three screws ④, then remove the entire mode cam assembly upwards.
- (6) Replace the entire mode cam assembly and mount it into position by following the above procedure in reverse.

Notes:

1. When attaching the mode motor assembly on the chassis, first align the mode motor worm wheel hole ⑥ with the mode motor base hole ⑦ by rotating the worm drive pulley.
2. Attach the mode motor assembly so that the ① part of the S link arm assembly comes as far to the right as possible. At this time, be sure to confirm that the hole ⑧ on the chassis, and holes ⑦ and ⑥ described above are in alignment.



1-15. CAPSTAN MOTOR (Figure 1-15)

- (1) Remove retaining ring ①, and then remove the brake link arm assembly.
- (2) Remove retaining rings ② and ③, then remove the pinch arm sub assembly upwards.
- (3) Working from the reverse side of the chassis, remove screws A and B, then remove the supporting plate.
- (4) Remove the drive belt, then remove the connector from the capstan motor circuit board. Remove screws C, D and E.
- (5) Remove the capstan motor.
- (6) Replace the capstan motor and mount it into position by following the above procedure in reverse. During this operation, care should be taken not to damage or magnetize the capstan shaft.

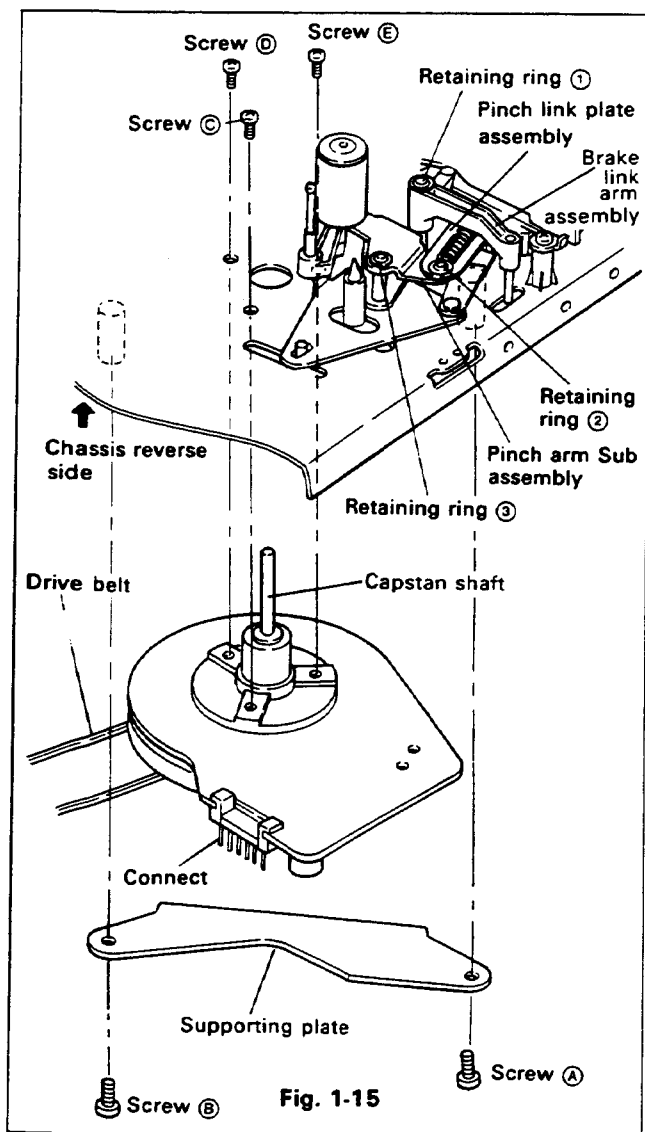


Fig. 1-15

1-16. PINCH ARM SUB ASSEMBLY (Figure 1-16)

- (1) Remove retaining ring ①, and then remove the brake link arm.
- (2) Remove retaining rings ②, then remove pinch link plate assembly ③.
- (3) Remove retaining ring ④ and then remove the pinch arm Sub assembly upwards.
- (4) Replace the pinch arm Sub assembly and assemble it into position by following the above procedure in reverse.

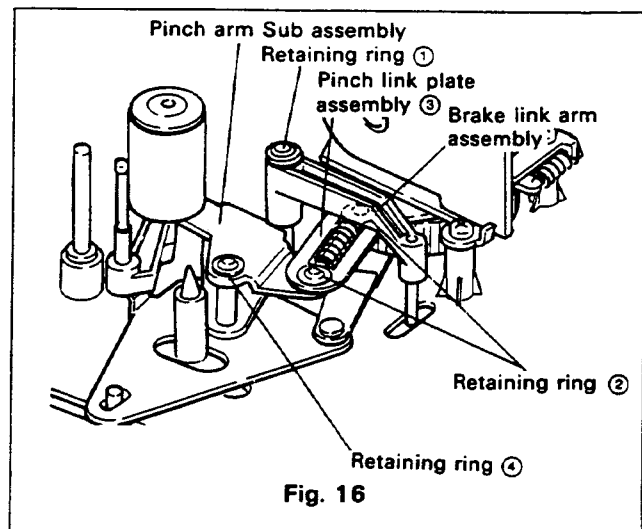
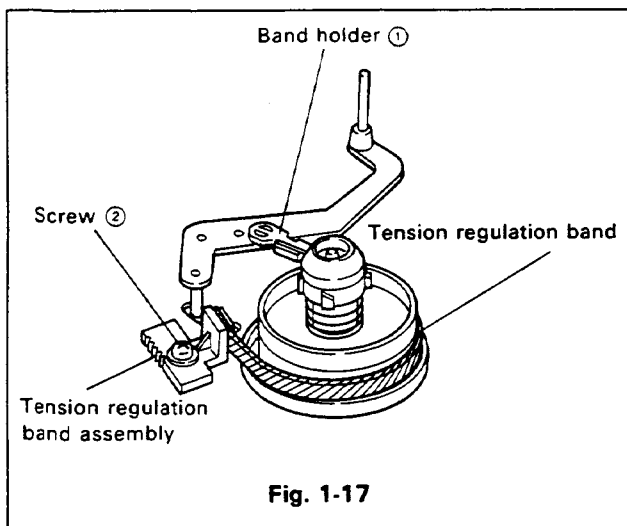


Fig. 16

1-17. TENSION REGULATION BAND ASSEMBLY (Figure 1-17)

- (1) Remove band holder ① of the tension regulation band assembly from the tension regulation arm assembly. Next, remove screw ② and remove the tension regulation band assembly. (Fig. 1-17)
- (2) Exchange the tension regulation band assembly with a new replacement and mount it into position by following the above procedure in reverse.
- (3) Adjust the tension regulation arm assembly according to the following procedure.

CAUTION: Excessive pressure on the lever during band holder replacement could bend it out of shape.

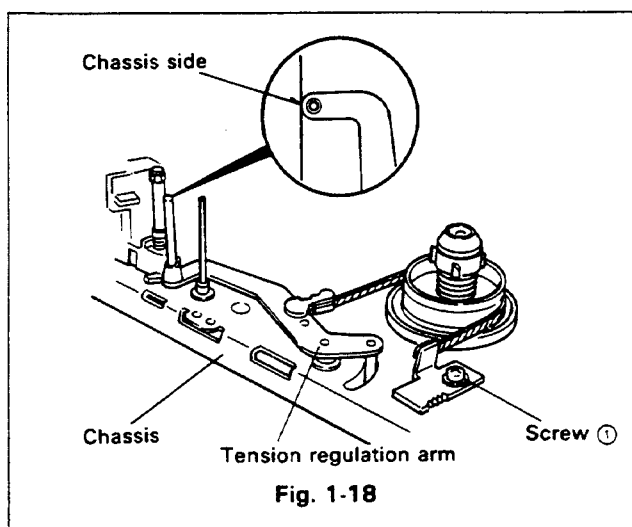


1-18. ADJUSTING THE TENSION REGULATION ARM POSITION (Figure 1-18)

- (1) With the cassette housing removed, activate the play mode.
- (2) Adjust screw ① so that the left end of the tension regulation arm comes in alignment with the chassis side, secure it firmly as shown in Fig. 1-18.

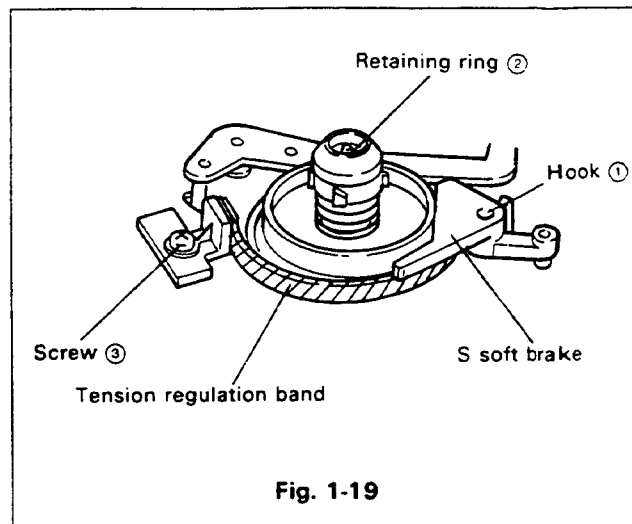
Note:

If back tension is incorrect, check the tension pole position. Use the back tension cassette gauge and confirm a value of between 17 and 32 gcm. If necessary, replace the tension arm spring or tension band and readjust the tension pole position.



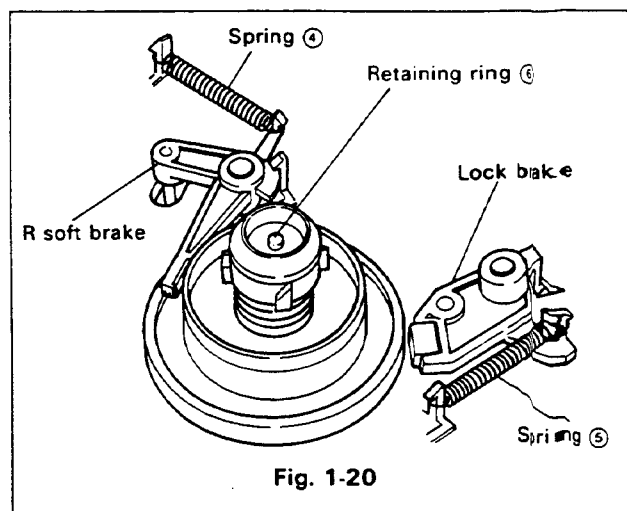
1-19. SUPPLY REEL DISK (Figure 1-19)

- (1) Release the S soft brake upwards from hook ①.
- (2) Remove the retaining ring from the reverse side of the tension regulation arm, then remove screw ③ and tension regulation band.
- (3) Remove retaining ring ②, then remove the supply reel disk.
- (4) Replace the reel disk and mount it into position by following the above procedure in reverse.



1-20. TAKE-UP REEL DISK (Figure 1-20)

- (1) Remove spring ④, then remove the R soft brake upwards.
- (2) Remove spring ⑤, then remove the lock brake upwards.
- (3) Remove retaining ring ⑥, then remove the take-up reel disk.
- (4) Replace the reel disk and mount it into position, by following the above procedure in reverse.



1-21. ADJUSTMENTS WHEN REPLACING THE SUPPLY AND TAKE-UP REELS (FIGURE 1-21)

Height adjustment of reel disk (height confirmation of supply and take-up reel disks)

Set the Master Plane B Jig (J-13) on the chassis. (Fig. 1-21-1)

Next, place the Height Gauge BM-2 Jig (J-14) in the positions indicated by the two arrows in Fig. 1-21-1. Slide as shown in Fig. 1-21-2, and verify that the upper surface of the reel disk slides over the A surface of the Height Gauge BM-2 Jig (J-14) and not over the B surface of the Height Gauge BM-2 Jig (J-14).

Note: When checking the height of the supply reel disk, place the Master Plane B Jig (J-13) so that the "S" mark of the Height Gauge BM-2 Jig (J-14) faces upwards.

When checking the height of the take-up reel disk, place the Master Plane B Jig (J-13) so that the "TU, R" mark of the Height Gauge BM-2 Jig (J-14) faces upwards.

If reel disk is outside this range, use polyester washers to make the required adjustments (Fig. 1-21-3).

Part numbers of polyester washers for adjustment
 16628731 thickness 0.5 mm
 16288001 thickness 0.13 mm

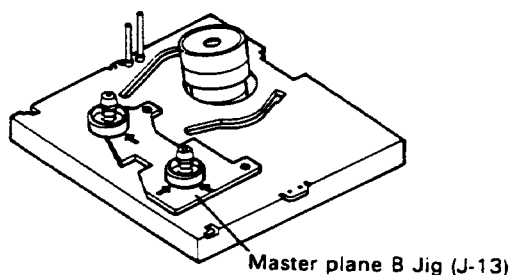


Fig. 1-21-1

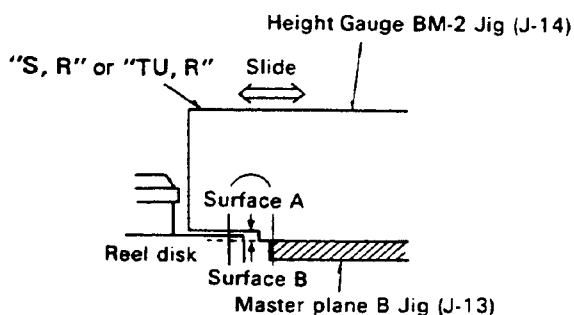


Fig. 1-21-2

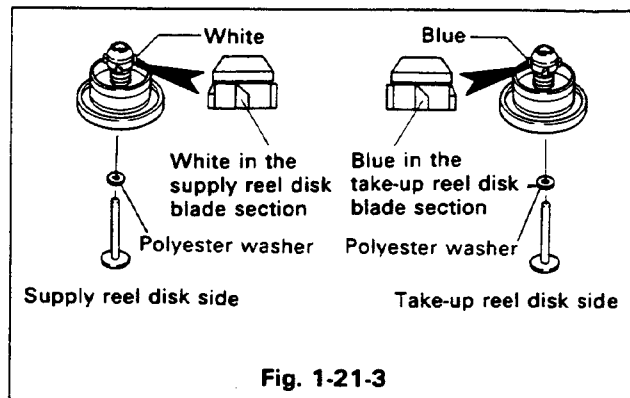


Fig. 1-21-3

1-22. TENSION REGULATION ARM ASSEMBLY (Figure 1-22)

- (1) Remove screw ①, then remove the tension regulation band assembly from the tension regulation arm assembly.
- (2) Remove retaining ring ② from the reverse side of the chassis.
- (3) Remove the tension regulation arm assembly upwards.
- (4) Replace the tension regulation arm assembly and mount it into position by following the above procedure in reverse.

Notes:

1. When installing the tension regulation arm assembly into place, pin A should fall into position C as shown in Fig. 1-22.
2. Adjust the position of the tension regulation arm by referring to Item 1-18.

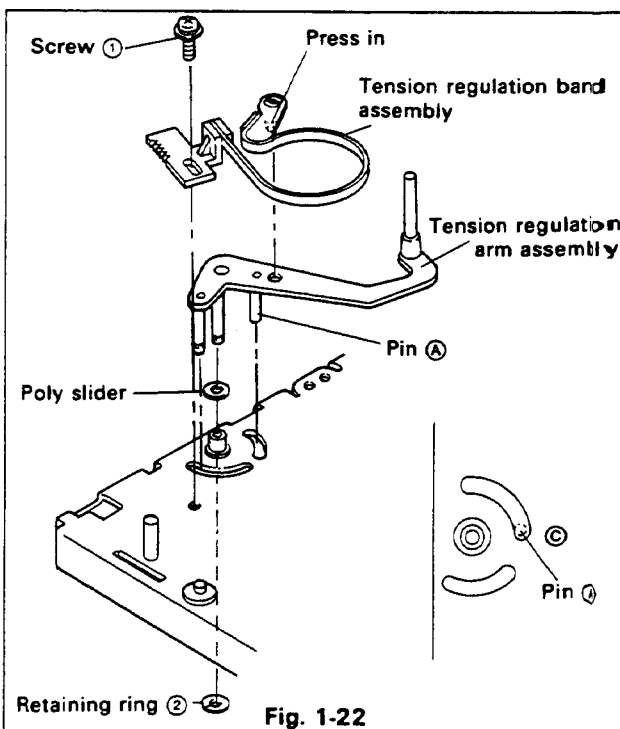


Fig. 1-22

1-23. MEASURING AND CHECKING THE FWD REEL TORQUE (Figure 1-23)

- (1) Remove the cassette housing and short TP101 and TP102 of the S/S/V circuit board with a clip. (Refer to Fig. 1-5.)
- (2) Activate the FWD mode.
- (3) Set the torque gauge on the take-up reel disk base and measure the torque.
- (4) FWD torque rating: $90 \text{ gcm} \pm 15 \text{ gcm}$.
- (5) FF, REW torque rating: more than 400 gcm .
- (6) REV torque rating: $170 \text{ gcm} \pm 25 \text{ gcm}$.

1-24. MEASURING AND CHECKING THE BRAKING TORQUE (Figures 1-23, 1-24, 1-25)

Be sure to carry out the following measurements after the brake arm (R),(L) has been replaced.

- (1) Remove the cassette housing.
- (2) Keep the VCR in the FF mode and unplug the AC cord.
- (3) Press the lock arm of the mode cam assembly in the direction of the arrow.

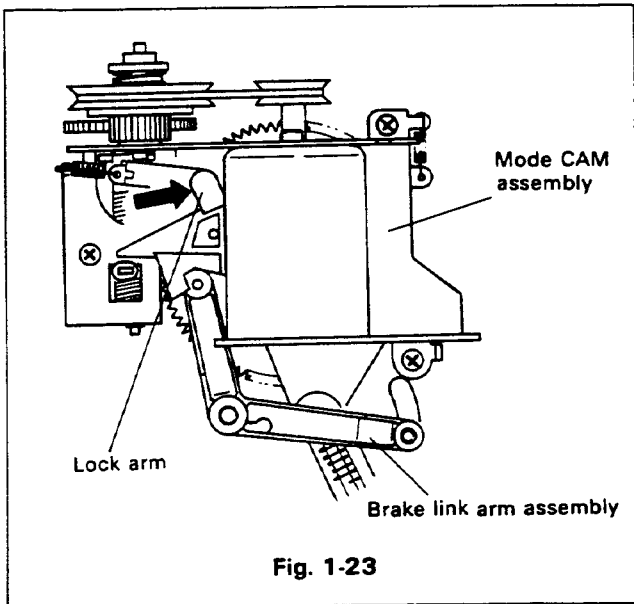


Fig. 1-23

- (4) Before measuring the torque of the brake arm (L), lightly push the S soft brake in the direction indicated by the arrow, then release the tension regulation band from the reel disk.
- (5) Place a torque meter on the S reel disk. Grasping the torque meter lightly, turn it clockwise, and read out the value when the meter face plate begins to move along together with the meter needle. Check that this value falls between $250 \sim 500 \text{ gcm}$.

- (6) Using the same procedure as above, lightly grasp the torque meter, turn the gauge counterclockwise, and read out the value when the meter face plate begins to move along with the meter needle. Check that this value falls between $50 \sim 180 \text{ gcm}$.

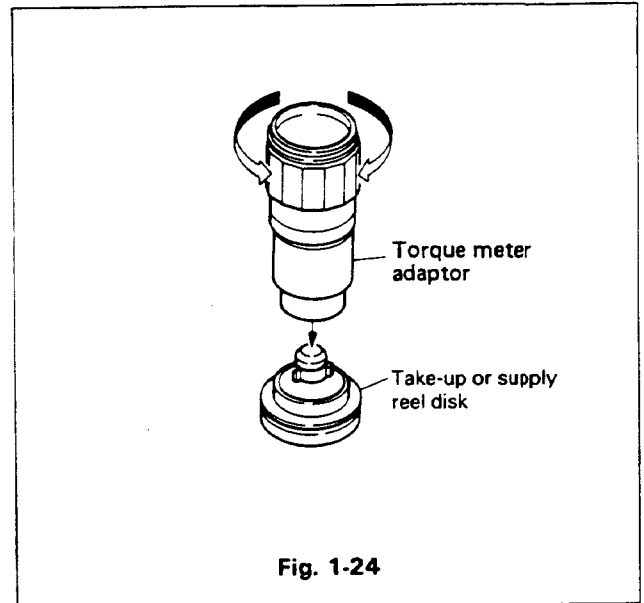


Fig. 1-24

Notes:

1. When measuring the brake arm (R) torque, lightly push the TU soft brake so that it releases from the reel disk, following the same procedure as when measuring the torque of the brake arm (L).
2. If the measured value deviates excessively from the appropriate values, carefully check the springs, etc.

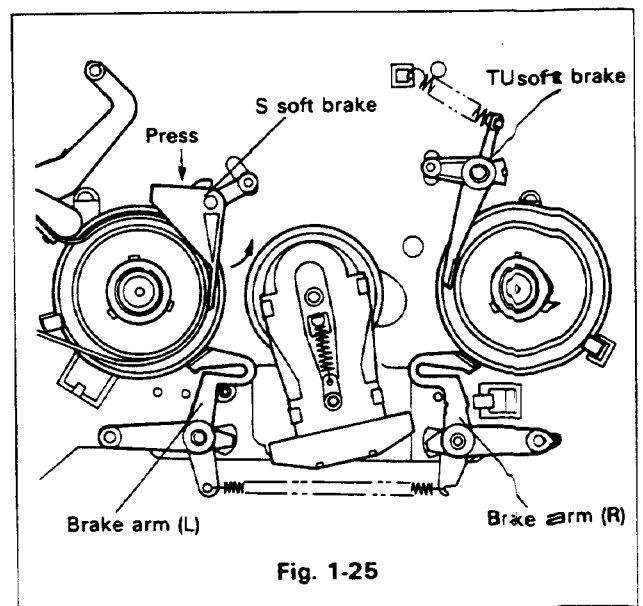


Fig. 1-25

2. CHECKING AND ADJUSTING THE TAPE PATH

Because the tape transport system is precision-adjusted at the factory prior to product shipment, there is usually no need to readjust the system. Note, however, that after

extensive use or when any tape transport system parts have been replaced, it becomes necessary to check and adjust the tape path and tape transport system.

2-1. TAPE PATH MECHANISM (Figure 2-1)

The VHS-system tape path is characterized by upper drum rotation with the video head to wind the tape around the drum in an M-shaped form.

To wind the tape accurately around the tilted drum, the tape is guided by a slanted guide posts (thrust poles) mounted to the left and right of the drum. The tape level during operation is determined by the pair of guide rollers.

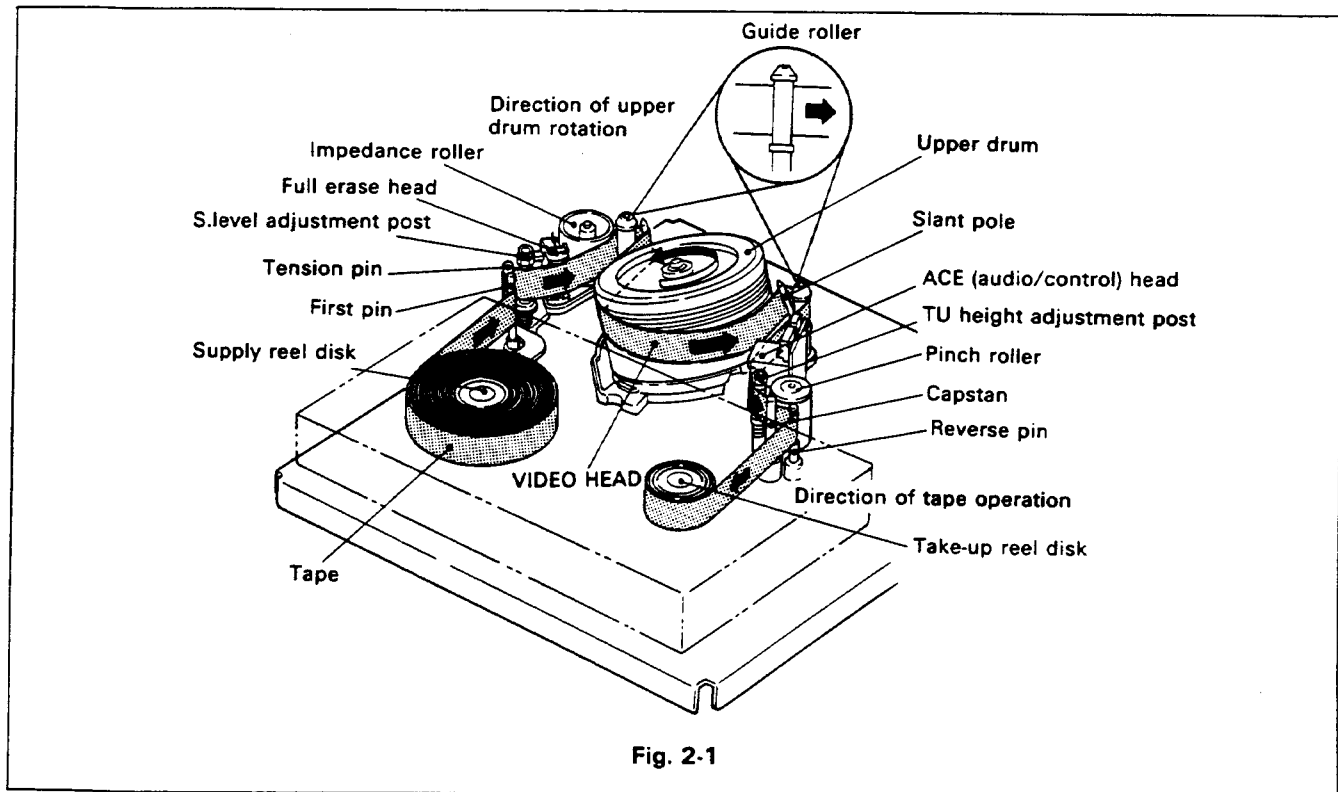


Fig. 2-1

The tape is always wound around the cassette through the first pin, tension pin, and S.level adjustment post via the path indicated by the arrows in Fig. 2-1.

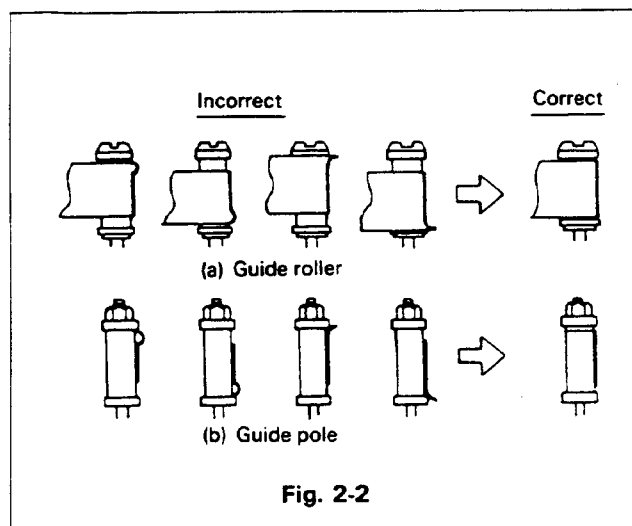
In addition, the impedance roller absorbs minor vibration in the direction of tape operation to eliminate picture jitter and voice wow and flutter.

The reverse pin controls the level of the tape fed from the take-up reel side before it reaches the capstan (pinch roller) when the tape is reversed in the REV mode.

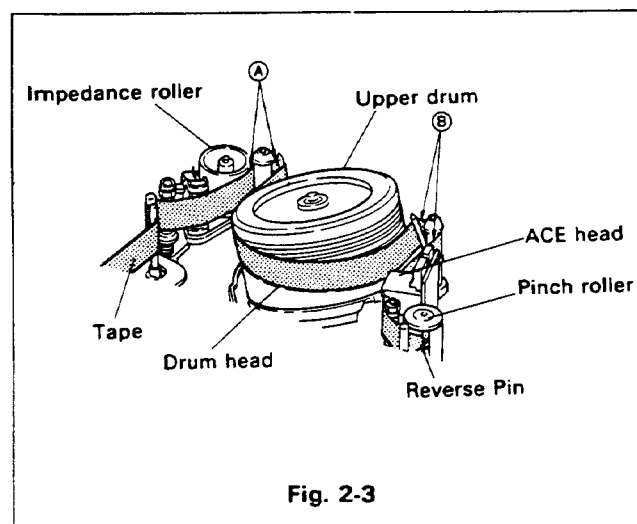
2-2. CHECKING THE TAPE TRANSPORT SYSTEM (Figures 2-2, 2-3)

- (1) Use a E-120 cassette tape.
- (2) Use a cleaning cloth soaked in cleaning solution (isopropyl alcohol) to clean the tape transport system parts (tape guide, tape contact surface of drum, capstan shaft, pinch roller, surface of ACE and FE heads, etc.).
- (3) Use a cassette tape to check the following points.
- (4) Operate the PLAY and STOP modes a few times to ensure proper operation.

- (5) In the PLAY, CUE, and REV modes, observe whether the tape is being wrinkled or not on the supply guide roller, supply guide pole, take-up guide roller, take-up guide pole and reverse pin. If the tape is being wrinkled, make the necessary adjustments by referring to figure 2-2 and performing the adjustments described in Item 2-3.



- (6) In the PLAY, CUE and REV modes, confirm that tape undulation does not occur at sections A and B shown in Fig. 2-3. To check section A, remove the impedance roller from the tape.
- (7) Repeat the REV and CUE modes a few times alternately to check that the tape does not move up and lower at the lower area of the ACE head.



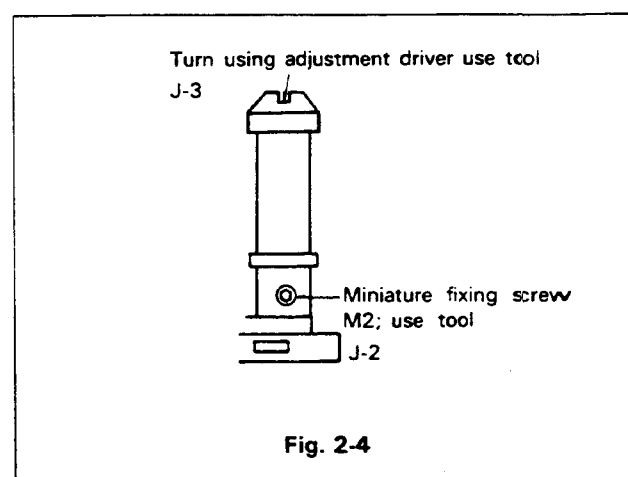
2-3. ADJUSTING THE TAPE TRANSPORT SYSTEM (Figures 2-4, 2-5, 2-6)

Only make these adjustments if a malfunction has been detected during the checking described in Item 2-2.

Note: Be sure to carry out intercompatibility adjustments after the tape transport system has been adjusted, be sure to make the intercompatibility adjustments to ensure compatibility among parts.

2-3-1 Adjusting the guide roller height (vertical pole height adjustment)

- (1) As shown in Fig. 2-4, loosen the fixing screws of the supply guide roller and take-up guide roller (until the guide rollers can be turned easily by using the adjustment screwdriver).



- (2) Insert a cassette tape, and activate the PLAY mode.
- (3) Rotate the supply guide roller with the adjustment screwdriver (J-3) to tighten tape tension at the upper and lower flanges.
- (4) Adjust the take-up guide roller according to the same procedure.

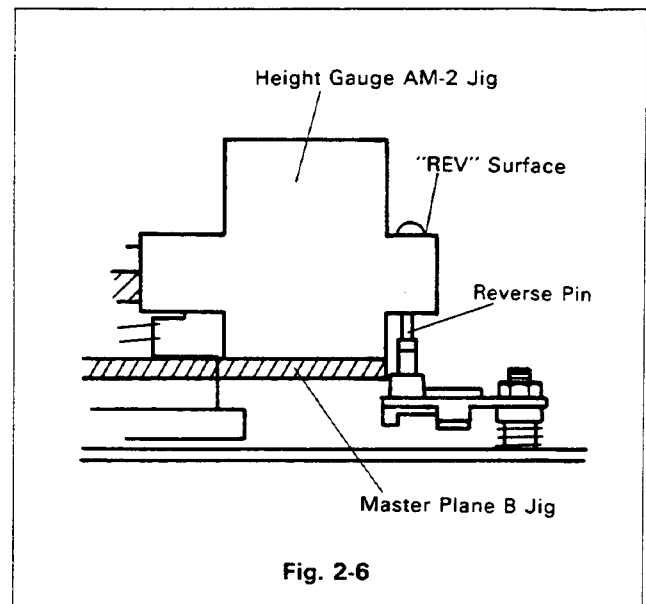
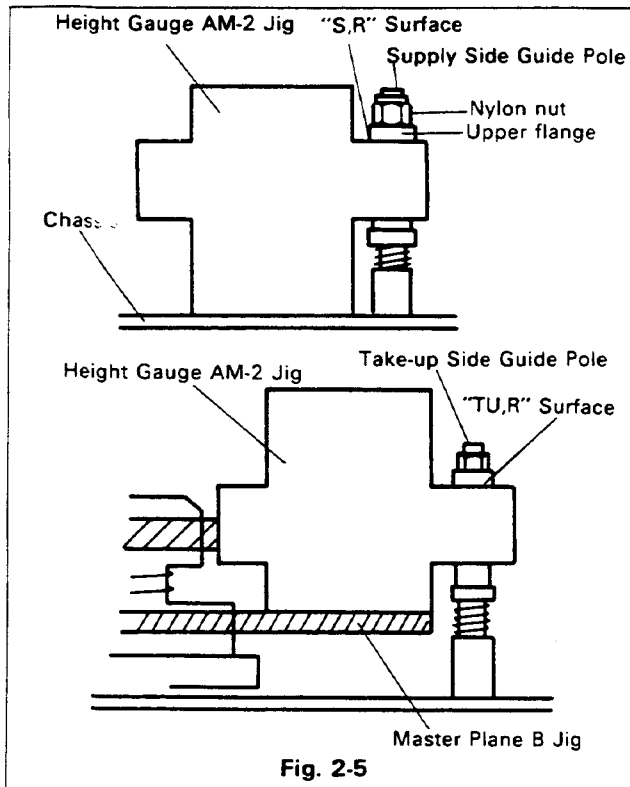
2-3-2 Adjusting the guide pole and reverse pin heights

Note: When adjusting the take-up guide pole height, be sure to remove the cap.

[A] Adjusting the guide pole and reverse pin heights

- (1) To adjust the height of supply-side guide pole, set the Height Gauge AM-2 Jig (J-12) on the chassis as shown in Fig. 2-5 and rotate the nylon nut to adjust to the height of the lower surface of the upper flange.
- (2) To adjust the height of take-up side guide pole, place the Master Plane B Jig (J-13) on the chassis, and place the Height Gauge AM-2 Jig (J-12) on J-13 with the side marked "TU, R" facing up as shown in Fig. 2-5.

Then rotate the nylon nut to adjust to the height of the lower surface of the upper flange.



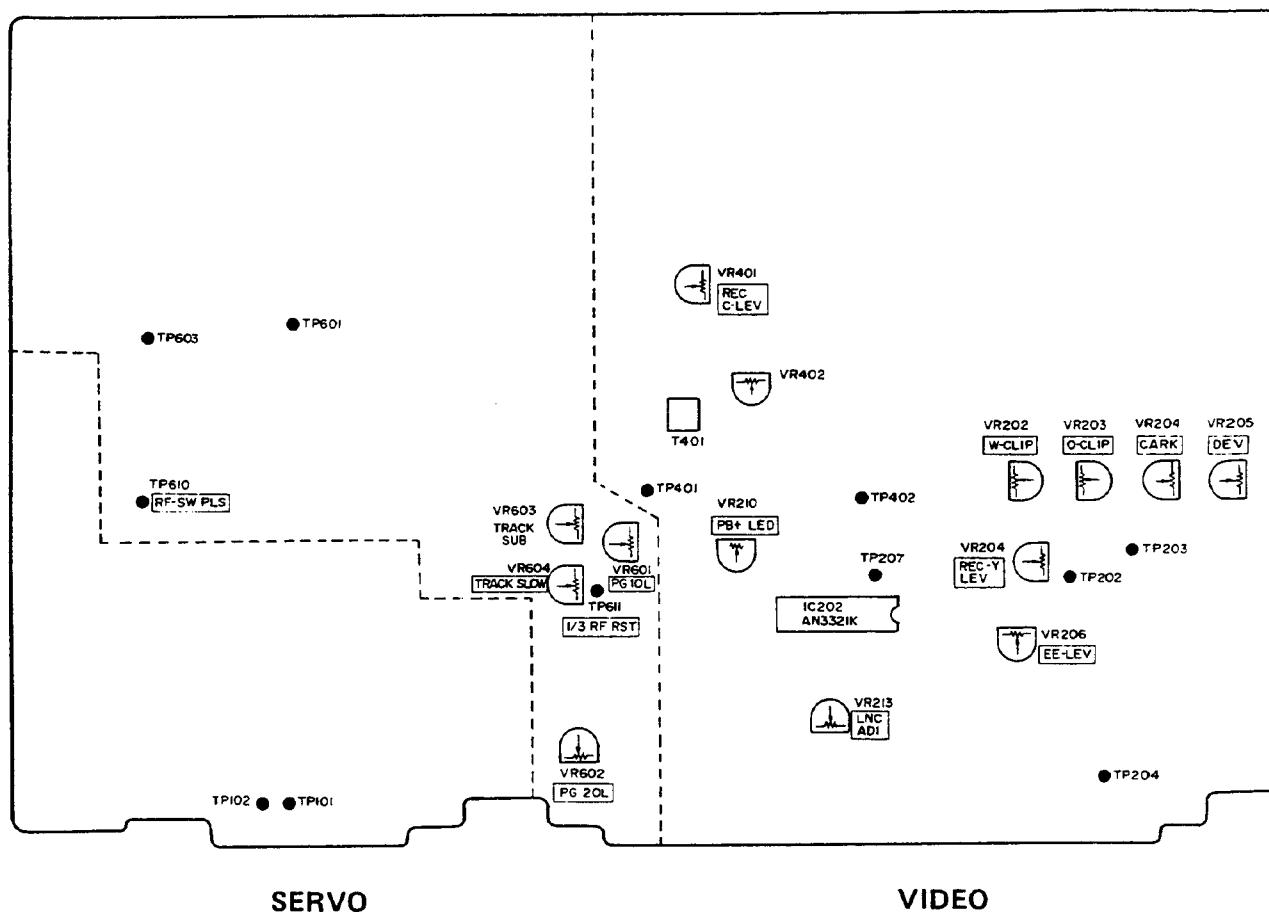
- (3) To adjust the height of the reverse pin, place the Master Plane B-2 Jig (J-13) on the chassis, and place the Height Gauge AM-2 Jig (J-12) on J-13 with the side marked "REV" facing up as shown in Fig. 2-6. Then rotate the nylon nut to adjust to the height of the lower surface of the upper flange.

[B] Precisely adjusting the supply and take-up guide pole heights

- Insert a E-120 cassette tape, and activate the PLAY mode.
- (2) As shown in Fig. 2-2, use the box driver (J-5) to precisely adjust the guide pole height and eliminate tape wrinkling on the pole.
- (3) If tape wrinkling cannot be eliminated by the above adjustment, check the supply reel disk height, tension pin, and other parts.

3. INTERCOMPATIBILITY ADJUSTMENTS

Because these adjustments have a significant effect on the picture quality in the respective modes, as well as affecting the degree of tape intercompatibility, be sure to perform the following procedures very carefully and thoroughly.

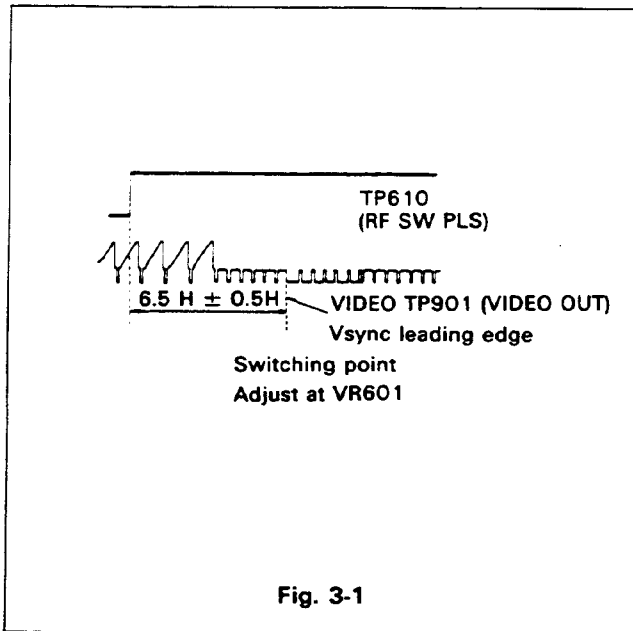


* This circuit board is viewed from component side.

3-1. CHECKING THE FM WAVEFORMS

3-1-1 Check 1: Checking the playback switching point

- (1) Play the alignment tape (MH-2).
- (2) Connect channel 1 of the oscilloscope to TP610 of the S/S/V circuit board.
Connect channel 2 of the oscilloscope to TP901 of the jack terminal circuit board.
- (3) Confirm that the interval from the RF switching pulse to the Vsync leading edge is at $6.5H \pm 0.5H$.
- (4) If not at $6.5H \pm 0.5H$, adjust VR601 on the S/S/V circuit board to set the interval at $6.5H \pm 0.5H$.



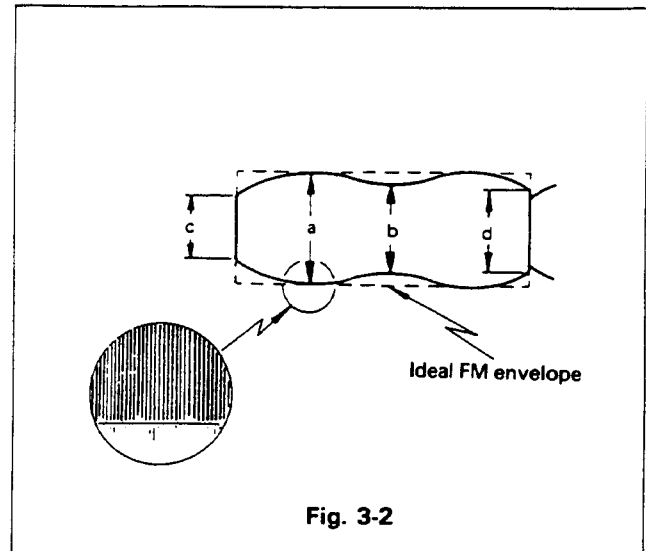
3-1-2 Check 2: Checking the FM waveform

- (1) Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board. Also connect TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board.
- (2) Play back the MH-2 alignment tape.
- (3) Turn the tracking knob to set the FM waveform output for the maximum level.
- (4) Read the FM waveform level (a) as shown in Fig. 3-2. If the waveform is a sawtooth wave, read the level at a wave section where the sawtooth waves are relatively uniform.
- (5) Read the FM waveform level (b) as shown in Fig. 3-2, and check the following:

$$\frac{b}{a} \cong 0.8$$

- (6) Read the FM waveform levels (c) (drum entrance) and (d) (drum exit), and check the following:

$$\frac{c}{a} \cong 0.7 \quad \frac{d}{a} \cong 0.7$$

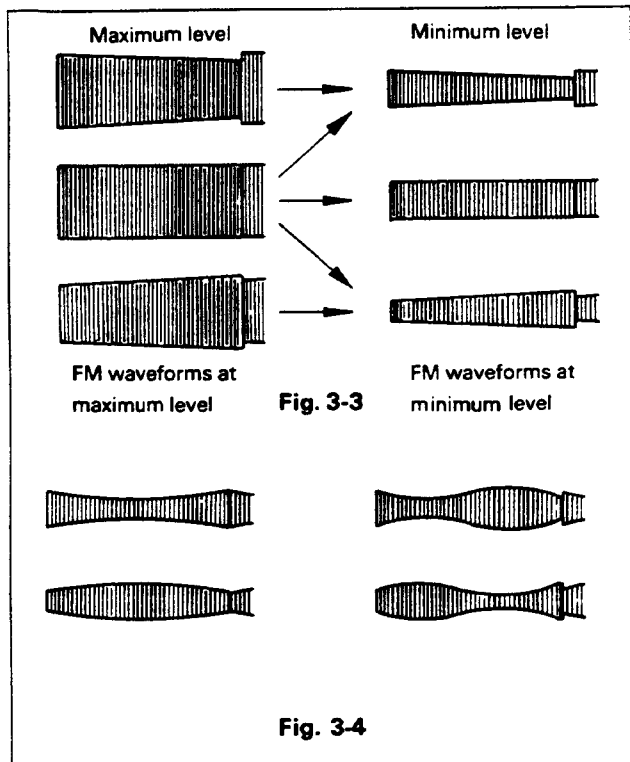


- Notes:**
1. Read the minimum levels of (b), (c), and (d).
 2. If the level values are within the above ranges, proceed to the following "Check 3-2".
 3. If any malfunction is detected, follow the coarse FM waveform adjustment procedure described in Item 3-2.

3-1-3 Check 3

- 1) As previously mentioned in Check 2 (connect the oscilloscope and play back the tape), turn the tracking knob while observing the FM waveforms. Confirm that the waveforms change linearly as shown in Fig. 3-3. When this linear change is confirmed, proceed to the ACE head height and azimuth adjustments described in Item 3-4.

- (2) When various waveforms are observed as shown in Fig. 3-4, it is necessary to make the precise adjustments described in Items 3-3.

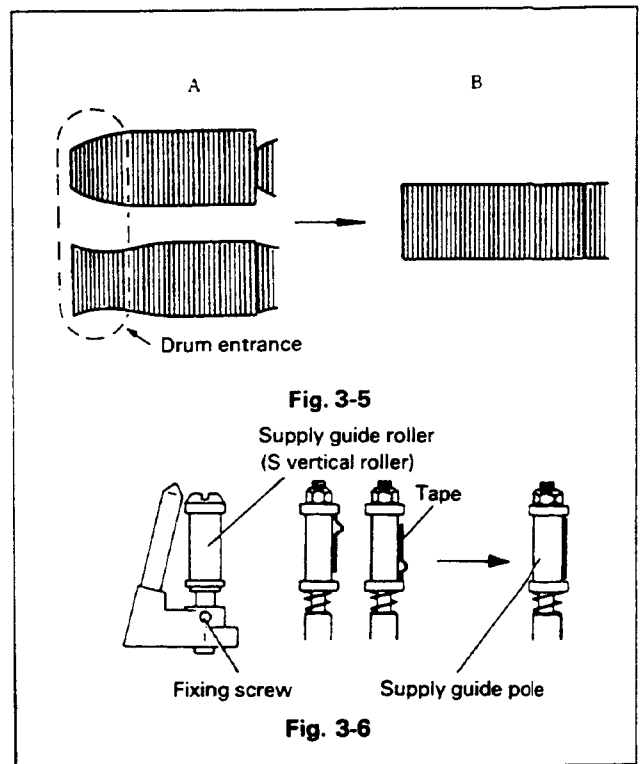


3-2. COARSE ADJUSTMENT OF FM WAVEFORMS (Preliminary adjustments)

- (1) Use the hexagonal screwdriver (J-2) to loosen the fixing screws of the supply guide and take-up guide rollers so that the guide rollers can be adjusted.
- (2) Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board. Also connect TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board to the oscilloscope as an external synchronization terminal.
- (3) Play back the MH-2 alignment tape.

3-2-1 Drum entrance side

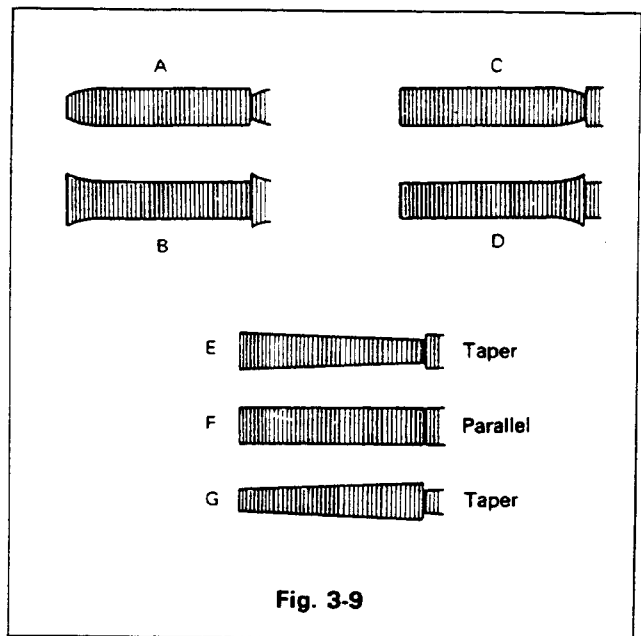
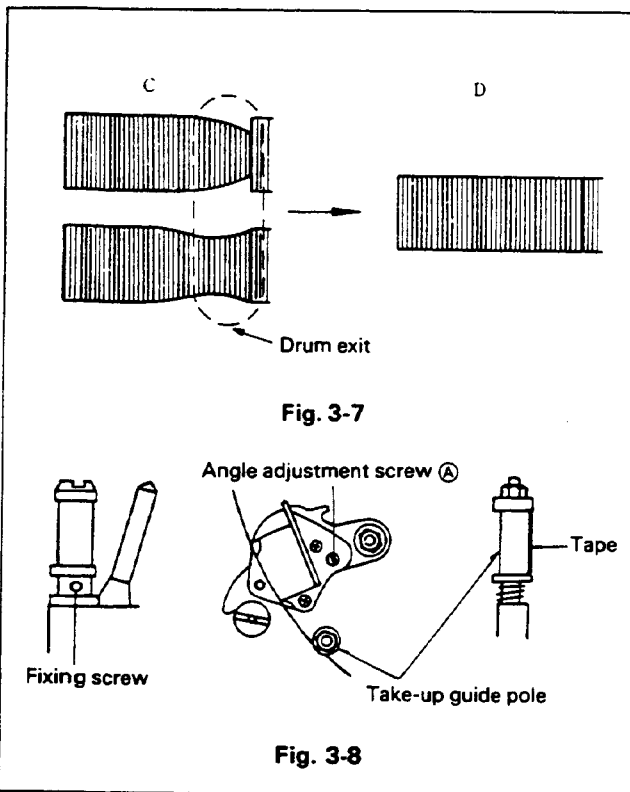
- (1) While observing the waveforms on the oscilloscope, turn the tracking knob to set the FM waveform for the maximum level.
- (2) If the FM waveforms look like A in Fig. 3-5, adjust the supply guide roller until the waveforms look like B in Fig. 3.5.



- Notes:**
1. Gently tighten the fixing screws so that the guide roller height adjustment screw can rotate freely. (Adjust within the proper range by using tool J-3).
 2. Make small guide roller adjustments to avoid damaging the MH-2 alignment tape.
 3. While observing the waveforms, check for any tape wrinkling at the guide poles and leading edge of the drum.

3-2-2 Drum exit

- (1) Adjust the FM waveforms by using the same procedure as used for drum entrance adjustment (by turning the take-up guide roller). If the waveforms look like C in Fig. 3-7, adjust the take-up guide roller until the waveforms look like D.



Note:

After completing these adjustments, confirm that the tape transport operation is functioning properly, and carefully tighten the fixing screws.

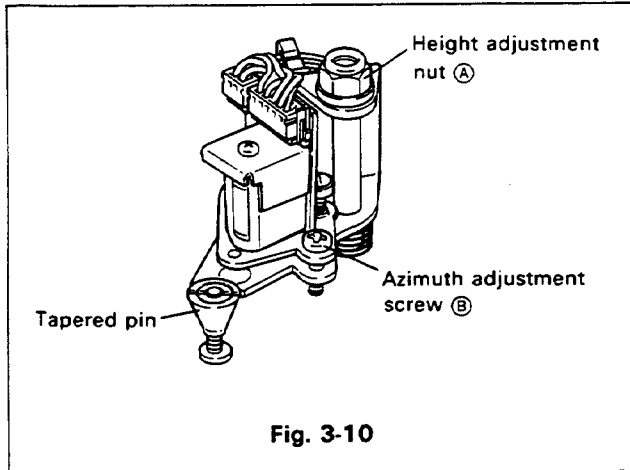
3-3. FINE ADJUSTMENT FOR INTER-COMPATIBILITY

- (1) Connect the oscilloscope to TP402 of the S/S/V circuit board. Also connect TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board to the external synchronization terminal of the oscilloscope. Playback the MH-2 alignment tape. While observing the waveforms on the oscilloscope, turn the tracking knob to set the FM waveforms for minimum levels.
- (2) If the waveforms look like A or B in Fig. 3-9, minimize the FM waveform output by carefully adjusting the supply guide roller until the waveforms look like E, F, or G in Fig. 3-9.
- (3) If the waveforms look like C or D in Fig. 3-9, minimize the FM waveform output by carefully adjusting the take-up guide roller until the waveforms look like E, F, or G in Fig. 3-9.
- (4) While turning the tracking knob to adjust the maximum and minimum levels of FM waveform output, adjust the supply and take-up guide rollers until the waveforms look like E, F, or G in Fig. 3-9.

3-4. ACE HEAD ADJUSTMENT

If the height of the audio/control head is incorrect, a poor SN ratio will result when reproducing prerecorded tapes. Refer to Fig. 3-10.

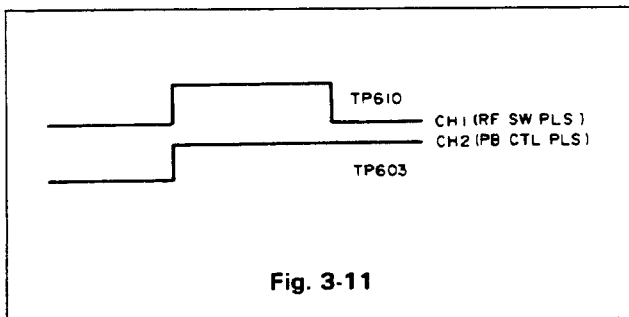
- (1) Connect channel 1 of the oscilloscope to the AUDIO OUT jack on the rear panel.
- (2) Play back the MH-2 alignment tape and reproduce the 6 KHz audio signal.
- (3) While observing the audio output signal on the oscilloscope, adjust the height adjustment nut (A) shown in Fig. 3-10 to the maximum output level.
- (4) Next, adjust the azimuth adjustment screw (B) to the maximum output level.



3-5. ADJUSTING THE CTL POSITION

[A] Adjusting subtracking

- (1) Connect channel 1 of the oscilloscope to TP610 of the S/S/V circuit board. Also, connect channel 2 of the oscilloscope to TP603 of the S/S/V circuit board.
- (2) Play back the MH-2 alignment tape.
- (3) Adjust VR603 so that the leading edge of CTL PLS is synchronized with the leading edge of the RF switching pulse as shown in Fig. 3-11.



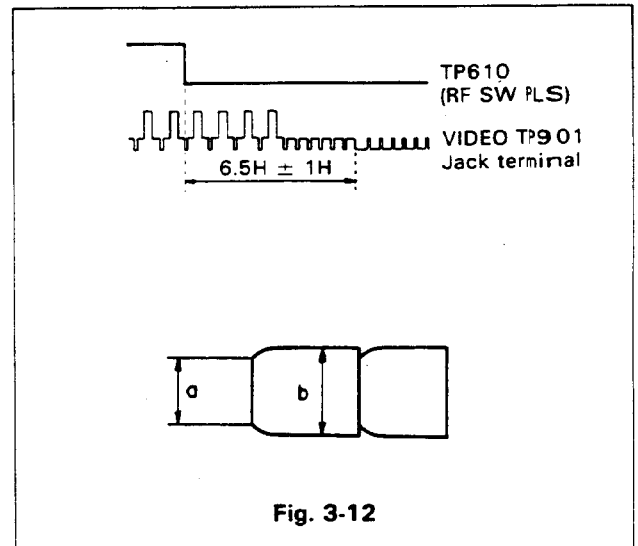
Note: The tracking knob must be set in the center position.

[B] Adjusting the ACE head position

- (1) Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board, and channel 2 of the oscilloscope to TP610 of the S/S/V circuit board or TP901 of the jack terminal circuit board.
- (2) Play back the MH-2 alignment tape, set the tracking knob at the center position, and turn the tapered pin in Fig. 3-10 so that the maximum FM waveform output level is set. Play back the MH-2 alignment tape, and confirm that the maximum FM waveform output level is obtained with the tracking knob set at the center position.

3-6. FINAL TESTING AND CHECKING

- (1) Connect channel 1 of the oscilloscope to TP610 of the S/S/V circuit board. Connect channel 2 of the oscilloscope to TP901 of the jack terminal circuit board.
- (2) Confirm that the REC timing is $6.5 \text{ H} \pm 1$.
- (3) Record this signal on a blank tape (using a monochrome or stair-step pattern).
- (4) Check the FM waveforms thus recorded on the tape. Connect channel 1 of the oscilloscope to TP402 of the S/S/V circuit board, and connect channel 2 of the oscilloscope to TP610 of the S/S/V circuit board. Then, play the tape back.
- (5) Confirm that the degree of evenness (a/b) is greater than 0.8, or greater than 0.85 if minor fluctuations occur.



After completing the above test and adjustment procedures, confirm that the tape transport operation is functioning properly, place locking paint on the tapered pin screw.

4. ELECTRICAL ADJUSTMENTS

4-1. PREPARATION

Electrical adjustments are required after replacing circuit components and certain mechanical parts. Note that these adjustments should only be made after completing all repairs and replacements. Also, do not attempt these adjustments unless the proper equipment is available.

4-1-1 Required test equipment and jig

- | | |
|---|--|
| ① Color TV monitor | ⑤ Audio generator |
| ② Oscilloscope: Wideband | ⑥ Alignment tape (MH-2), and other general electrical tools. |
| ③ Signal generator: Color bar, Stair-step | ⑦ Video tape: E-60, E-120 |
| ④ Frequency counter | ⑧ Digital multimeter or tester |

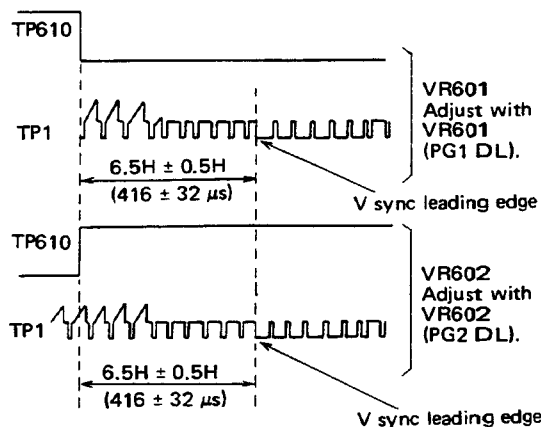
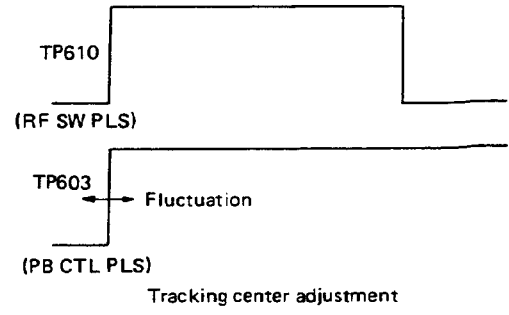
4-1-2 Alignment tape contents

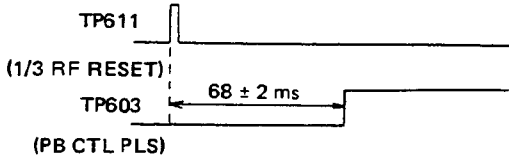
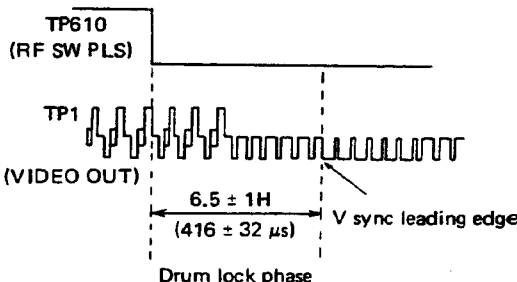
1. MH-2

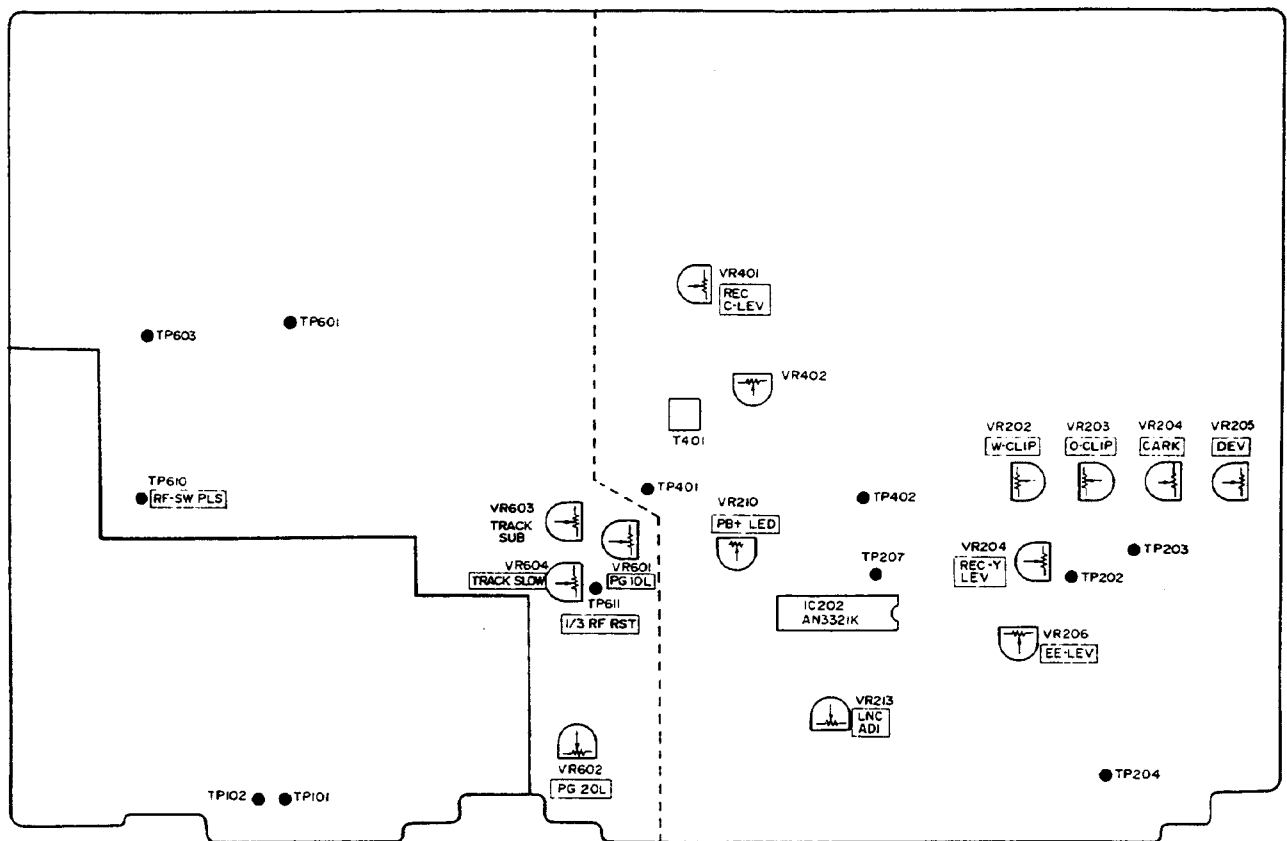
No.	Playback Time	Video Signal	Audio Signal	Applications
1	10 minutes	Stair-step	6 kHz	<ul style="list-style-type: none">● Interchangeability checks and adjustments● Servo circuit checks and adjustments● Audio head azimuth adjustment
2	5 minutes	(none)	3 kHz	<ul style="list-style-type: none">● Tape speed checks● Wow and flutter checks
3	10 minutes	Color bar	1 kHz 0 dB	<ul style="list-style-type: none">● Video signal playback circuit checks and adjustments● Audio signal playback circuit checks and adjustments
4	3 minutes	RF sweep	(none)	<ul style="list-style-type: none">● Video head resonance adjustments● Marker: 2.0, 4.0, 5.0 MHz (not used)

Table 4-1 MH-2 contents

4-2. SERVO CIRCUIT (S/S/V board)

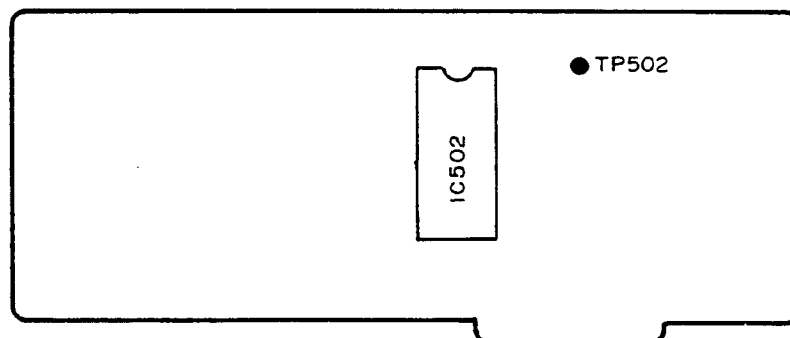
No.	Item	Check-point	Adjustment Parts	Signal & Mode	Adjustment & Confirmation
1	Video switching point	TP610 (RF SW PLS) TP1 [on jack terminal] (VIDEO OUTPUT)	VR601 (PG1 DL) VR602 (PG2 DL)	MH-2 P.B.	<p>1. Connect an oscilloscope to TP610 and TP1.</p> <p>2. Play back the alignment tape specified at left, watch the monitor screen, and adjust the tracking VR to the best tracking condition.</p> <p>3. Adjust VR601 and VR602 so that the phase relationship of RF SW PLS with the reproduced video signals will be as shown below.</p> 
2	Tracking SUB VR	TP610 (RF SW PLS) TP603 (PB CTL PLS)	VR603 (TRACKING SUB)	MH-2 P.B.	<p>1. Connect an oscilloscope to TP601 and TP603.</p> <p>2. Press the tracking pushbutton to the center click position.</p> <p>3. Play pack MH-2, and adjust VR603 until the waveform has the phase relationship shown below. (Triggering TP610 causes the waveform at TP603 to fluctuate. Adjust to the center of the wave.)</p> 

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Adjustment & Confirmation
3	Slow SUB tracking VR	TP611 (1/3 RF RESET PLS) TP603 (PB CTL PLS)	VR604 (TR SUB SLOW)	MH-2 P.B.	<ol style="list-style-type: none"> 1. Connect TP611 and TP603 to an oscilloscope. 2. Press the tracking pushbutton to the center click position. 3. Play back MH-2, and adjust VR604 until the waveform has the phase relationship shown below. 
4	Drum lock phase (REC TIMING)	TP610 (RF SW PLS) TP1 [on jack terminal] (VIDEO OUTPUT)	Check	<ul style="list-style-type: none"> • Color bar • Standard REC mode 	<ol style="list-style-type: none"> 1. Connect an oscilloscope to TP610 and TP1. 2. Select the standard REC mode, and check the waveforms at TP610 and TP1 that their phase relationship is as shown below. <p>Note: If a damaged tape is played back, the lock phase will show much deviation during an operation check. If tape damage is slight, check that the center of lock phase deviation meets the relationship shown below.</p> 



SERVO

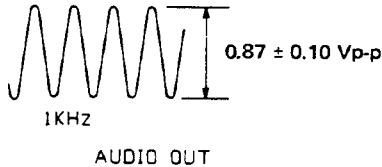
* This circuit board is viewed from component side.

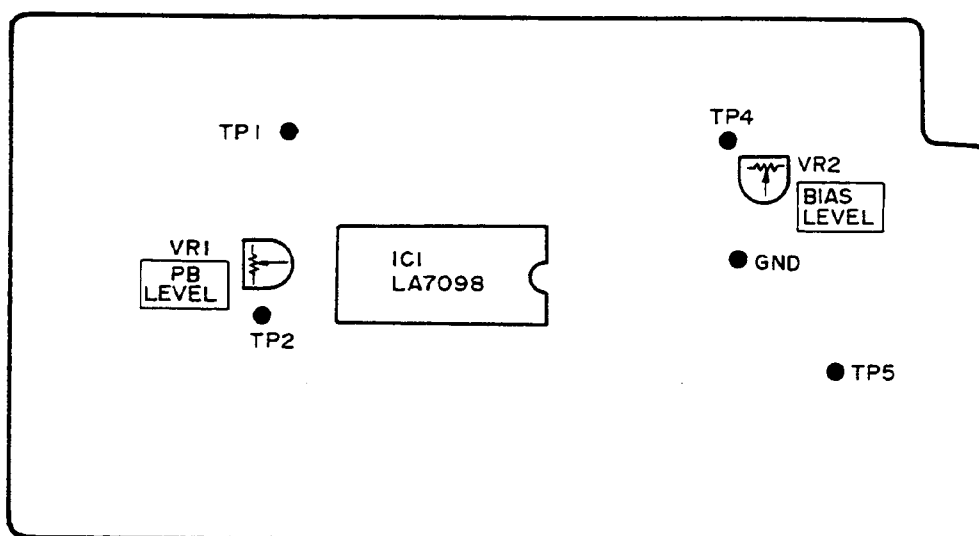


PREAMP

* This circuit board is viewed from component side.

4-3. AUDIO CIRCUIT (AUDIO board)

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
1	PB Level	AUDIO Output Terminal	VR1 (P.B LEVEL) of AUDIO board	<ul style="list-style-type: none"> ● Alignment Tape MH-2 ● Play Back 	<p>Adjust VR1 so that the output level of the AUDIO output terminal is set to -8 ± 1 dBs. (Oscilloscope display: 0.87 ± 0.10 Vp-p.)</p> 
2	Head Bias	AUDIO board TP4, GND	VR2 (BIAS LEVEL)	<ul style="list-style-type: none"> ● No signal is input ● SP (2H) REC mode 	<p>Adjust VR2 so that the voltage between TP4 ⊕ and GND terminal ⊖ (displayed on the AC millivoltmeter) of the AUDIO board is set to 110 ± 10 mVrms.</p>



AUDIO

* This circuit board is viewed from component side.

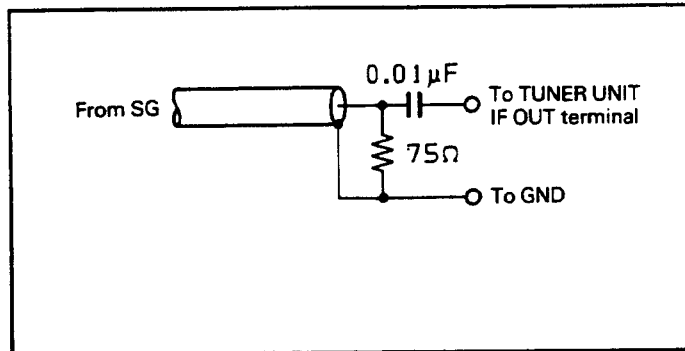
4-4. TUNER/IF CIRCUIT

1

AFT transformer adjustments

- (1) Connect the 38.9 MHz, 80 dB μ unmodulated signal to the IF output terminal of the Tuner Unit, by using the input pad shown below.

Note that no signal is being input to the ANT IN terminal at this time.

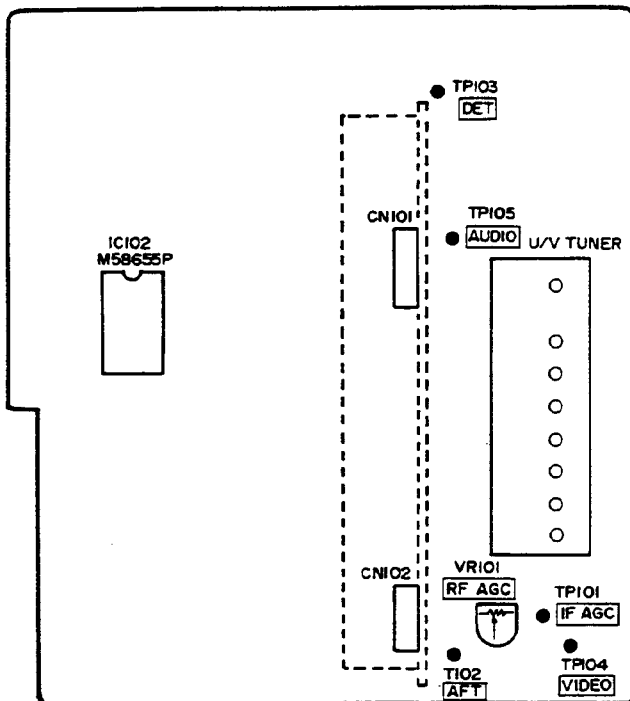


- (2) Connect an oscilloscope to TP102 (AFT).
- (3) Slowly turn T2 (AFT Transformer) to adjust the output voltage of TP102 to 5.0 ± 0.5 VDC at the point where the voltage suddenly fluctuates. (Do not adjust the voltage to 6.0 VDC.)

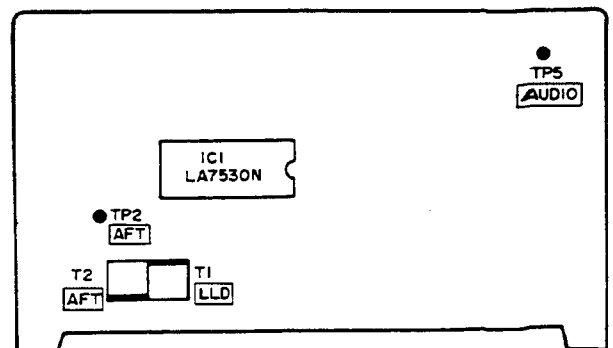
2

RF AGC adjustments

- (1) Input a 58 dB μ RF signal (channel E7) to the ANT IN terminal.
- (2) Connect a digital voltmeter to AGC terminal of the TUNER UNIT, and adjust VR101 (RF AGC) so that the voltage at the AGC terminal is set to 6.5 ± 0.5 VDC.



TUNER

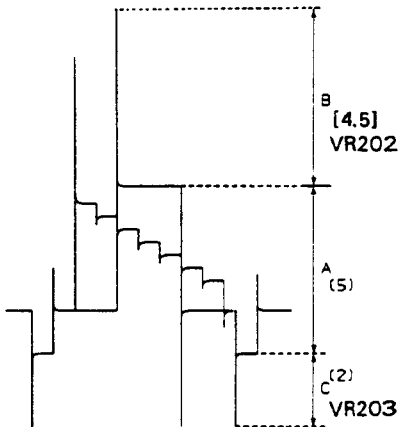
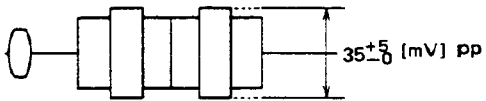


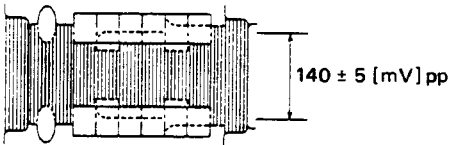
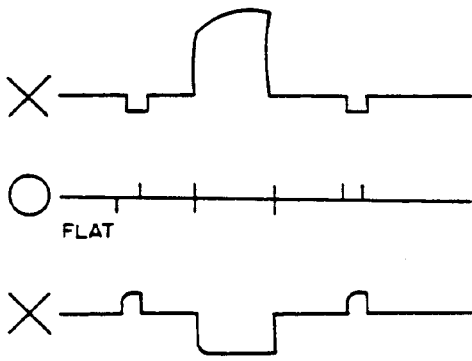
IF

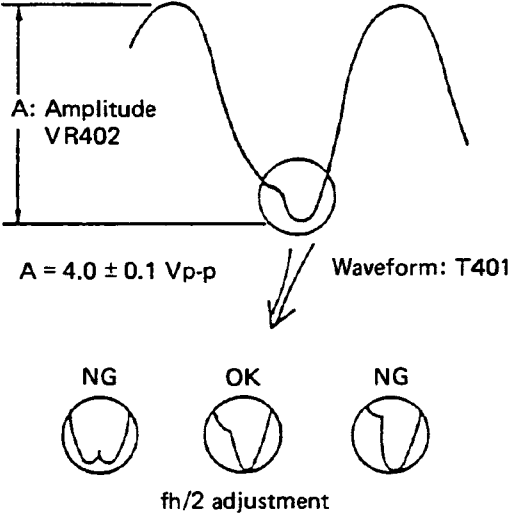
* This circuit board is viewed from component side.

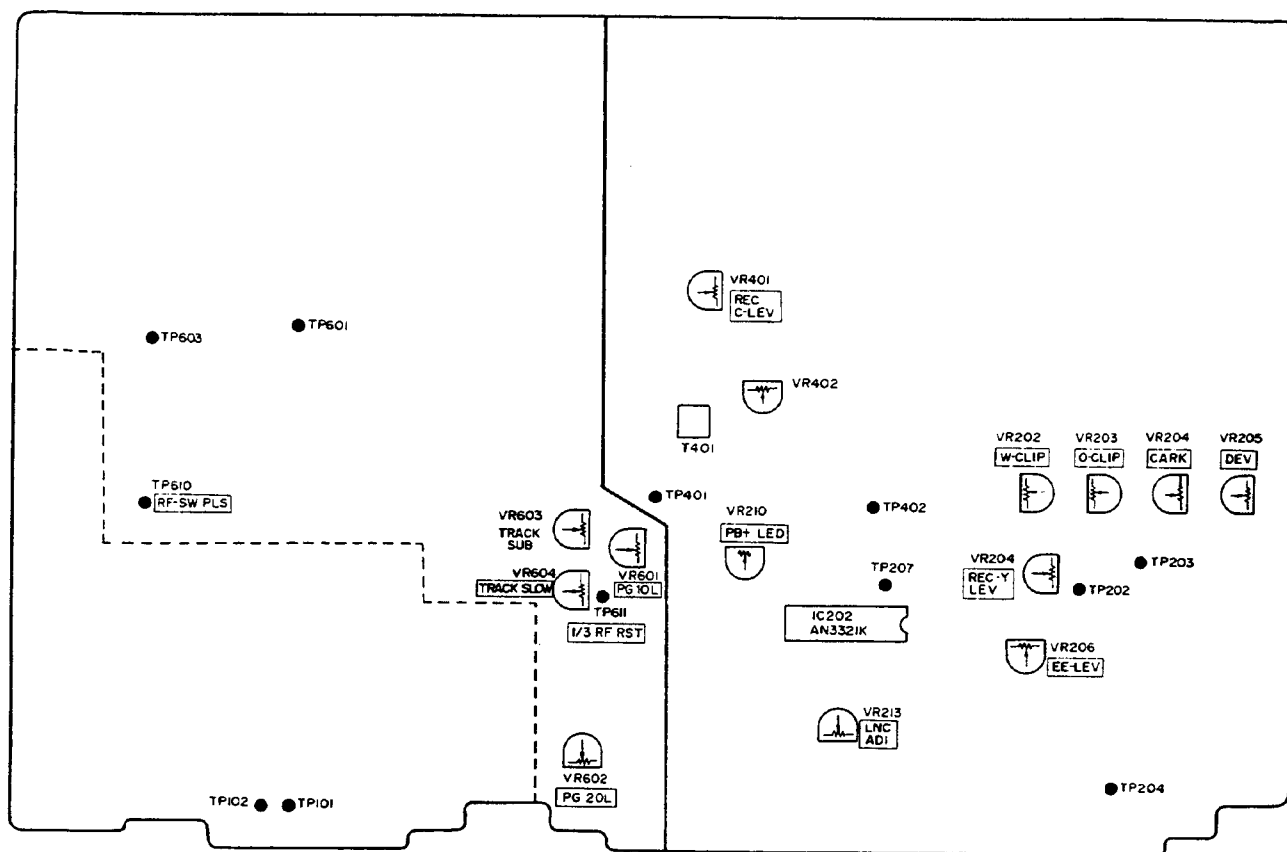
2.

[illegible]

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
3	White Clip Dark Clip	TP203 (Trigger: TP204)	VR202 (White Clip), VR203 (Dark Clip)	Color Bar, REC	<ol style="list-style-type: none"> 1. Input the color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP203 of the S/S/V board, and adjust the amplitude CAL knob of the oscilloscope so that the distance between sync tip and white peak of the waveform reads 5 scales. 3. Adjust VR202 (WHITE) and VR203 (DARK) so that the waveform overshoot and under-shoot satisfy the ratio shown below.  <p style="text-align: center;">$A : B : C = 4.5 : 5 : 2$</p>
4	REC Color Level Adjustment	TP501 (Trigger: TP204) of AMP board	VR401	Color Bar REC	<ol style="list-style-type: none"> 1. Input the color bar signal to the VIDEO IN terminal. 2. Connect an oscilloscope to TP501. 3. Rotate VR201 to minimize the FM signal. 4. Adjust VR401 so that the amplitude of color bar signal RED section is set to 35 ± 5 mV. <p>Note: Be sure to make the adjustment noted in Item 6 after this adjustment.</p> 

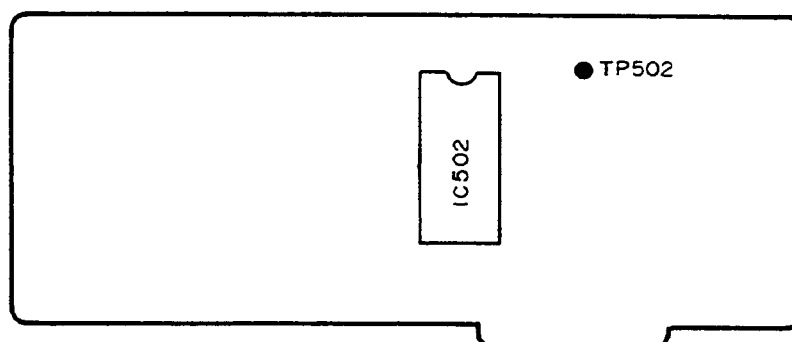
No.	Item	Check-point	Adjustment Parts	Signal & Mode	Description and Waveform
5	REC Y FM Level Adjustment	TP501 (Trigger: TP204) (PRE AMP board)	VR201	Color Bar, REC	<p>1. After making the adjustment in Item 5, adjust VR201 so that the amplitude of white peak section is set to 140 ± 5 mV.</p> 
6	Noise Cancel Level Adjustment	TP207 (Trigger TP204) of S/S/V board	VR213 of S/S/V board	PB	<p>Play back the tape prerecorded and adjust VR213 so that TP207 waveforms of the S/S/V board are flat. At this time, waveform difference should be less than 20 mVpp.</p> 

No.	Item	Check-point	Adjustment Parts	Signal & Mode	Adjustment & Confirmation
7	SECAM DET. sync amplifier oscillating level	TP401	VR402 T401	Input: SECAM color bar signal REC	<ol style="list-style-type: none"> 1. Input a SECAM color bar signal to VIDEO IN. 2. Connect an oscilloscope (10:1) to TP401. 3. Adjust VR402 until the waveform at TP401 appears as shown below in MESECAM mode. (If the waveform appears otherwise, adjust T401.)  <p>A: Amplitude VR402</p> <p>$A = 4.0 \pm 0.1 \text{ Vp-p}$ Waveform: T401</p> <p>NG OK NG</p> <p>fh/2 adjustment</p>
8		TP401		MESECAM self recording playback	<ol style="list-style-type: none"> 1. Record SECAM color bar signals in SECAM mode and play back. 2. Connect an oscilloscope (10:1) to TP401. Check that the waveform has an amplitude (A) of $4.0 \pm 0.2 \text{ Vp-p}$.



VIDEO

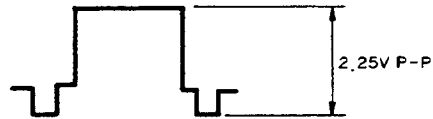

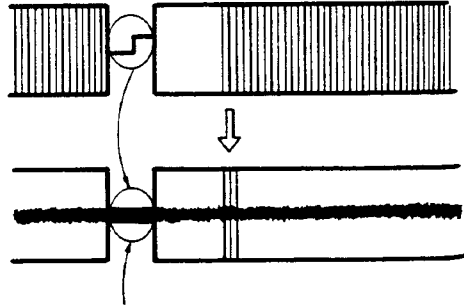
* This circuit board is viewed from component side.

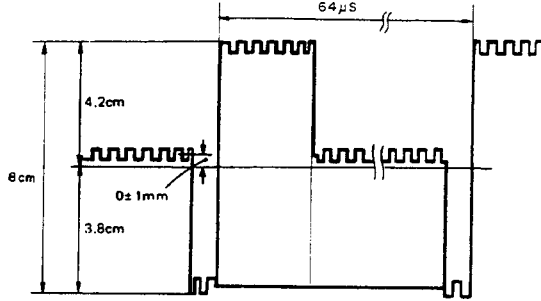


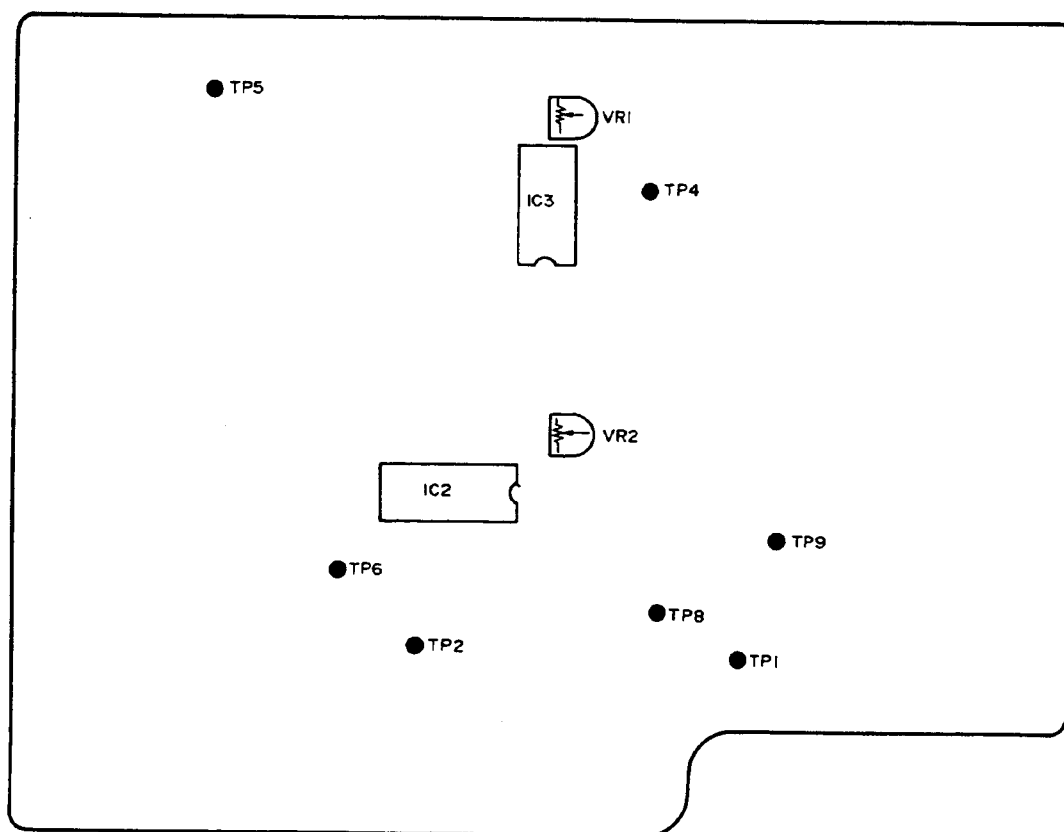
PREAMP

* This circuit board is viewed from component side.

4-6. DIGITAL

No.	Item	Check-point	Adjusting Parts	Mode/Condition	Adjustment and Confirmation
1	D/A LEVEL	TP8	VR1 (D/A LEVEL)	SLOW mode	<ol style="list-style-type: none"> 1. Play back a tape on which color bar signals are recorded. 2. Check that the output at TP201 on the S/S/V board is 2 Vp-p, select the SLOW mode, and turn VR3 until the white peak of the waveform at TP8 begins to be clipped. 3. Turn VR1 (D/A LEVEL) until the peak-to-peak value of the clipped waveform at TP8 is 2.25 Vp-p. 
2	A/D LEVEL	TP8	VR3 (A/D LEVEL)	SLOW mode	<p>Play back the tape in the SLOW mode, and adjust VR3 (A/D LEVEL) so that the color bar signal at TP8 is 2 Vp-p.</p> 
3	DA LEVEL	TP2	VR1 (D/A LEVEL)	PB DNR ON (Use color bar tape.)	<p>Play back the tape in the normal mode (with the NR switch ON DNR II mode), and adjust VR1 (D/A LEVEL until the video signals at TP2 are at the minimum level. (V rate)</p>  <p>Adjust V sync signal to be at the same level I.</p>

No.	Item	Check-point	Adjusting Parts	Mode/Condition	Adjustment and Confirmation
4	VCO	TP6 (PLL)	VR2 (VCO)	SLOW mode	<p>1. Play back the tape in the SLOW mode, turn the VARIABLE knob on the oscilloscope until the peak of the waveform at TP6 is at the 8th division of the oscilloscope scale.</p> <p>2. Turn VR2 (VCO) to adjust as shown below.</p> 



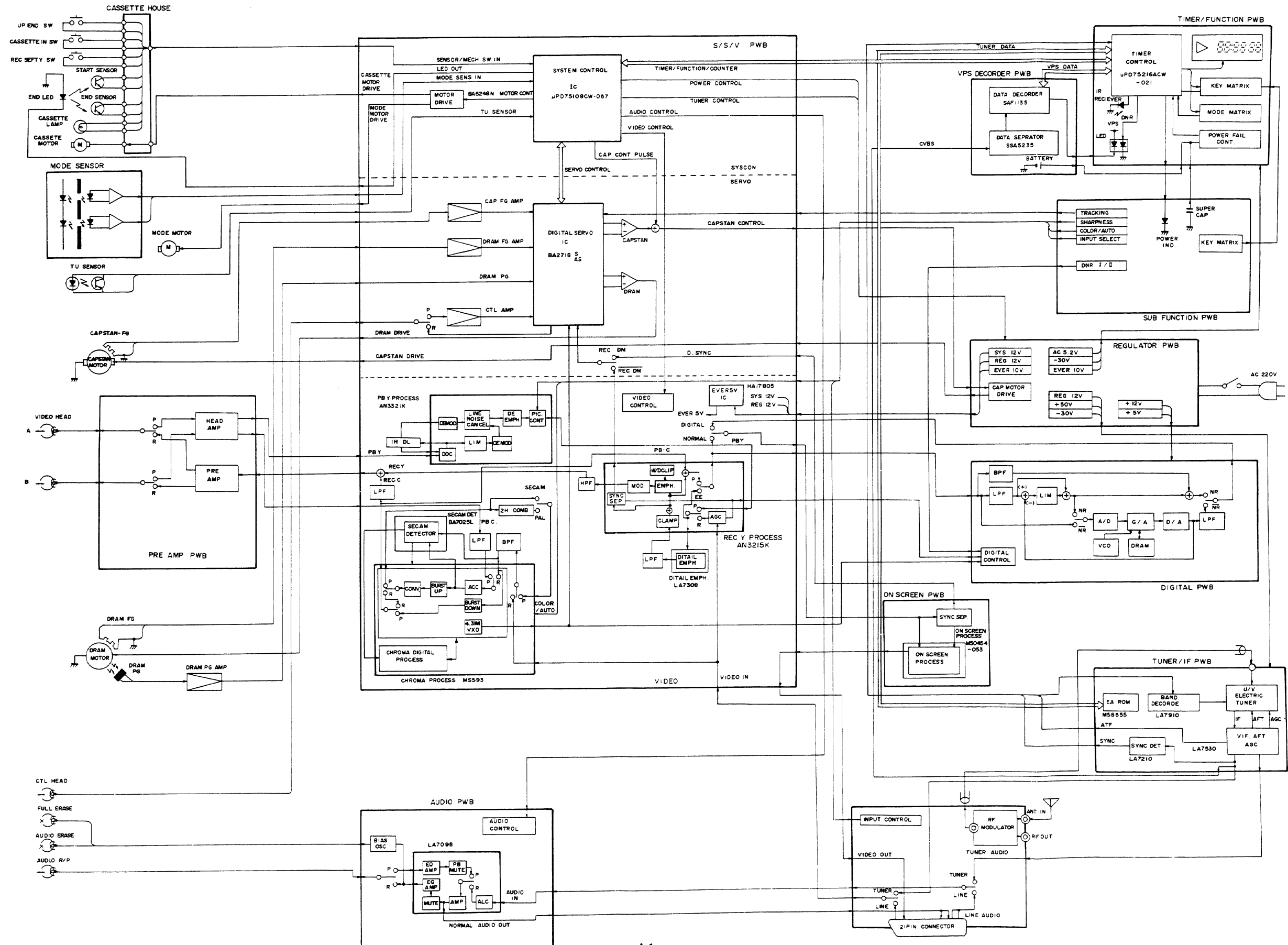
DIGITAL

* This circuit board is viewed from component side.

SECTION 4

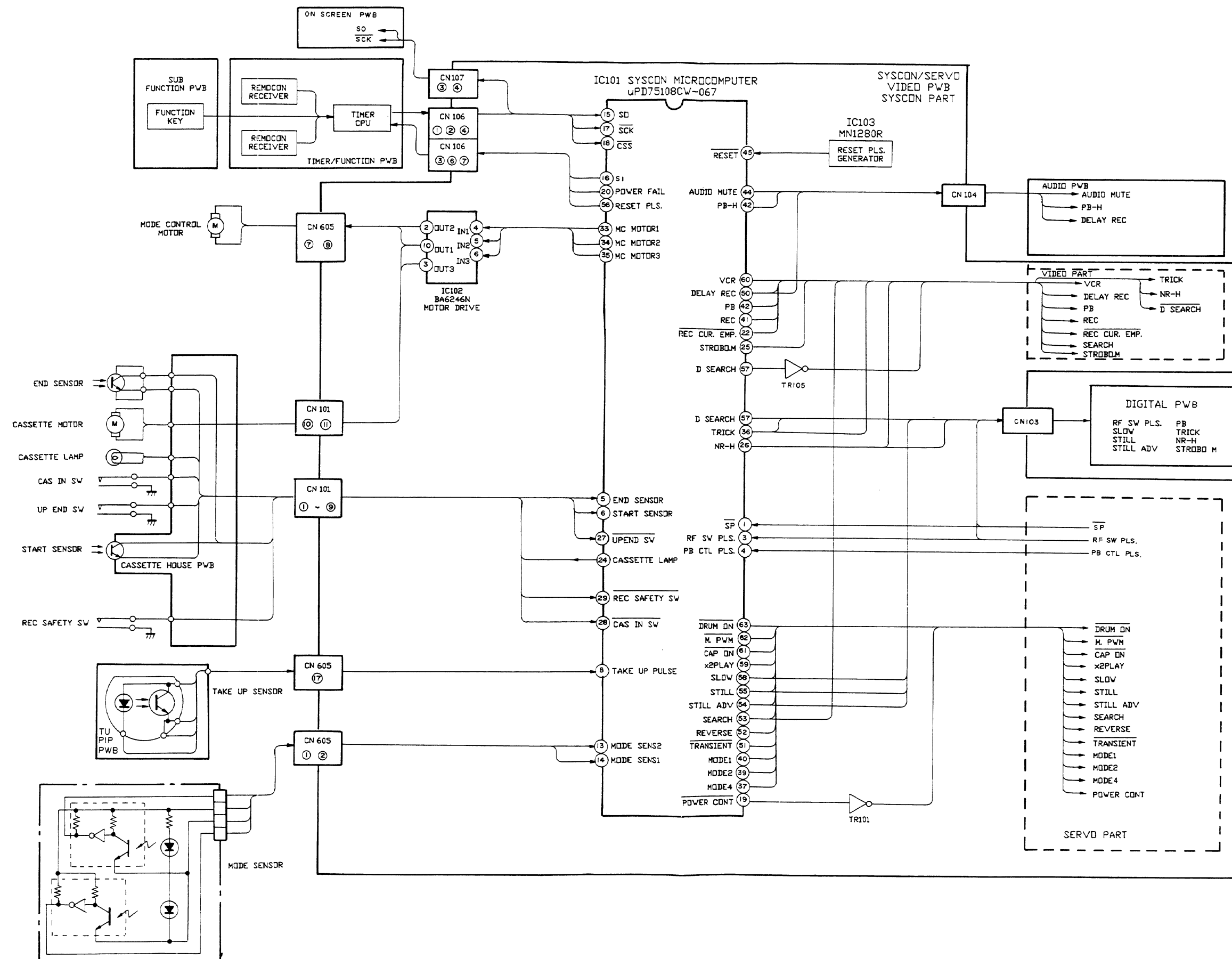
DIAGRAMS AND TIMING CHARTS

1. GENERAL BLOCK DIAGRAM

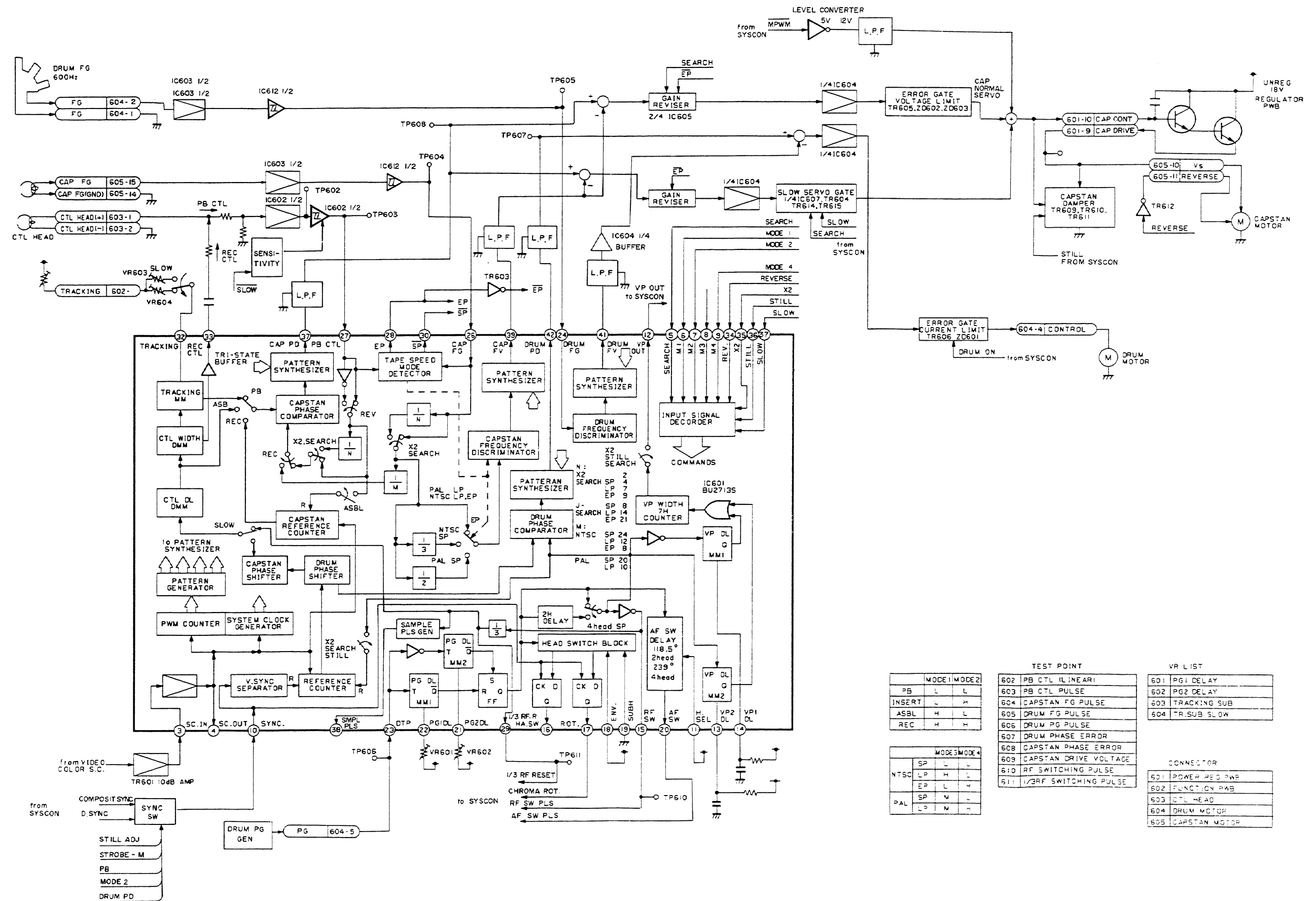


2. BLOCK DIAGRAM

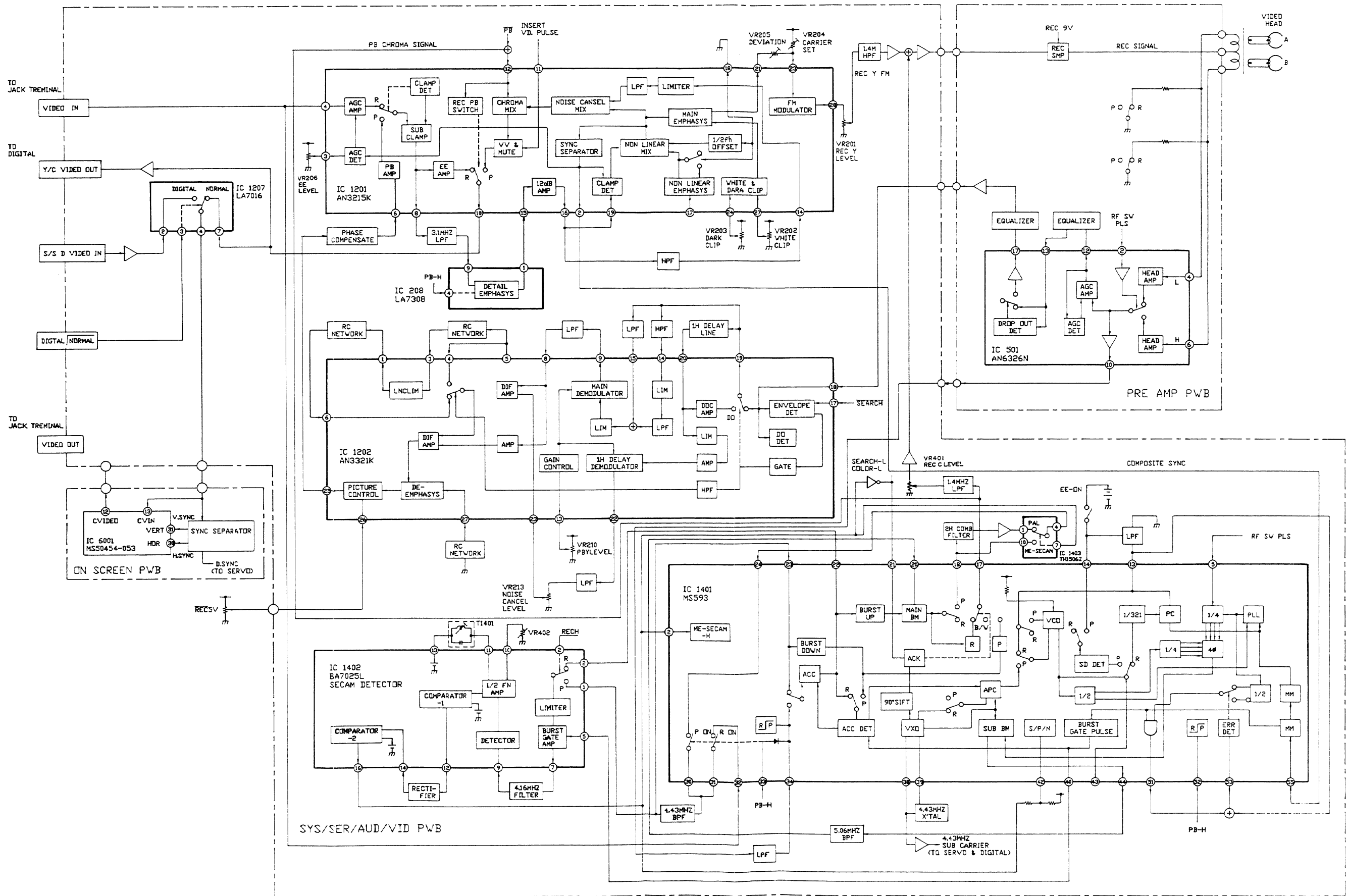
2-1. SYSTEM CONTROL BLOCK DIAGRAM



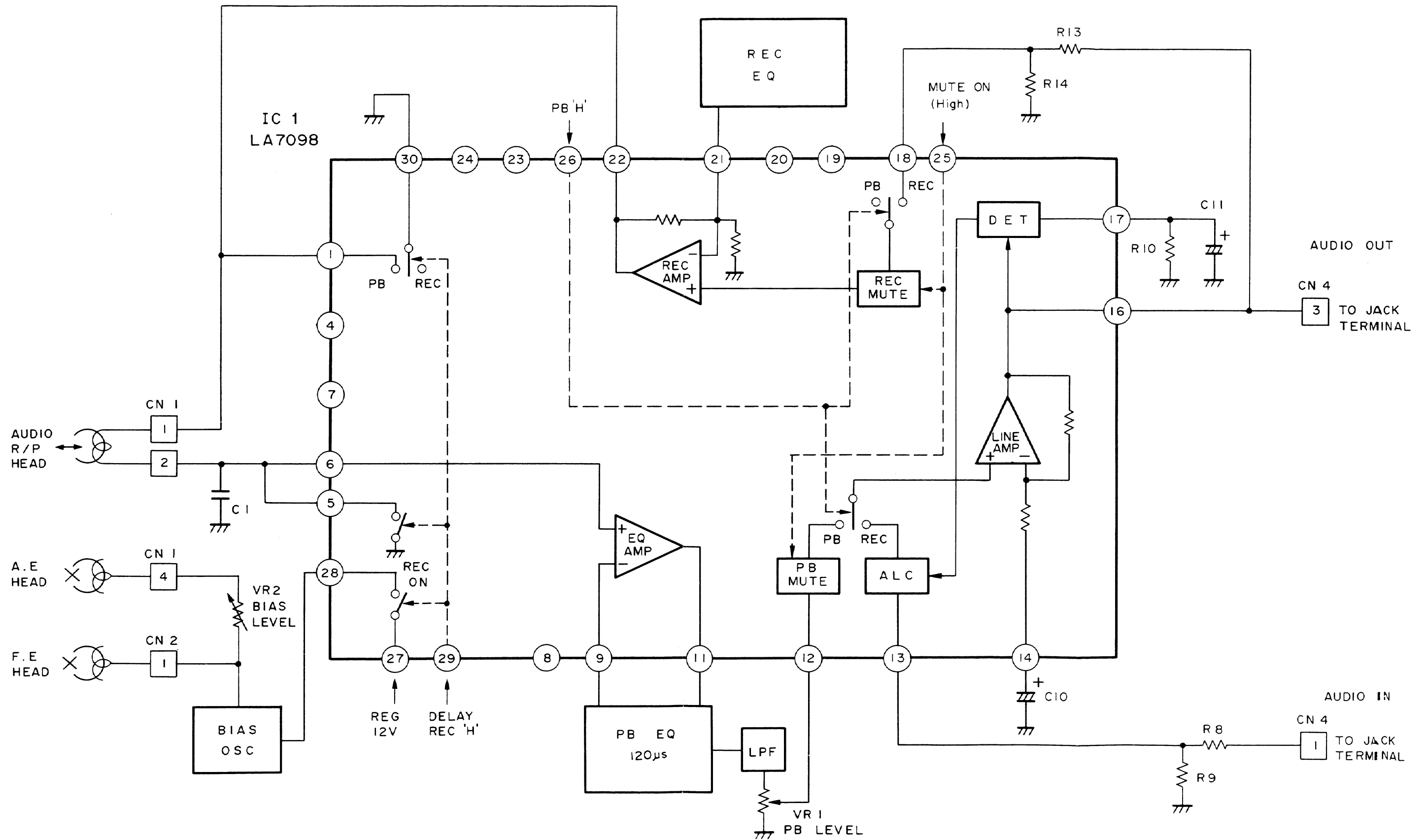
2-2. SERVO CONTROL BLOCK DIAGRAM



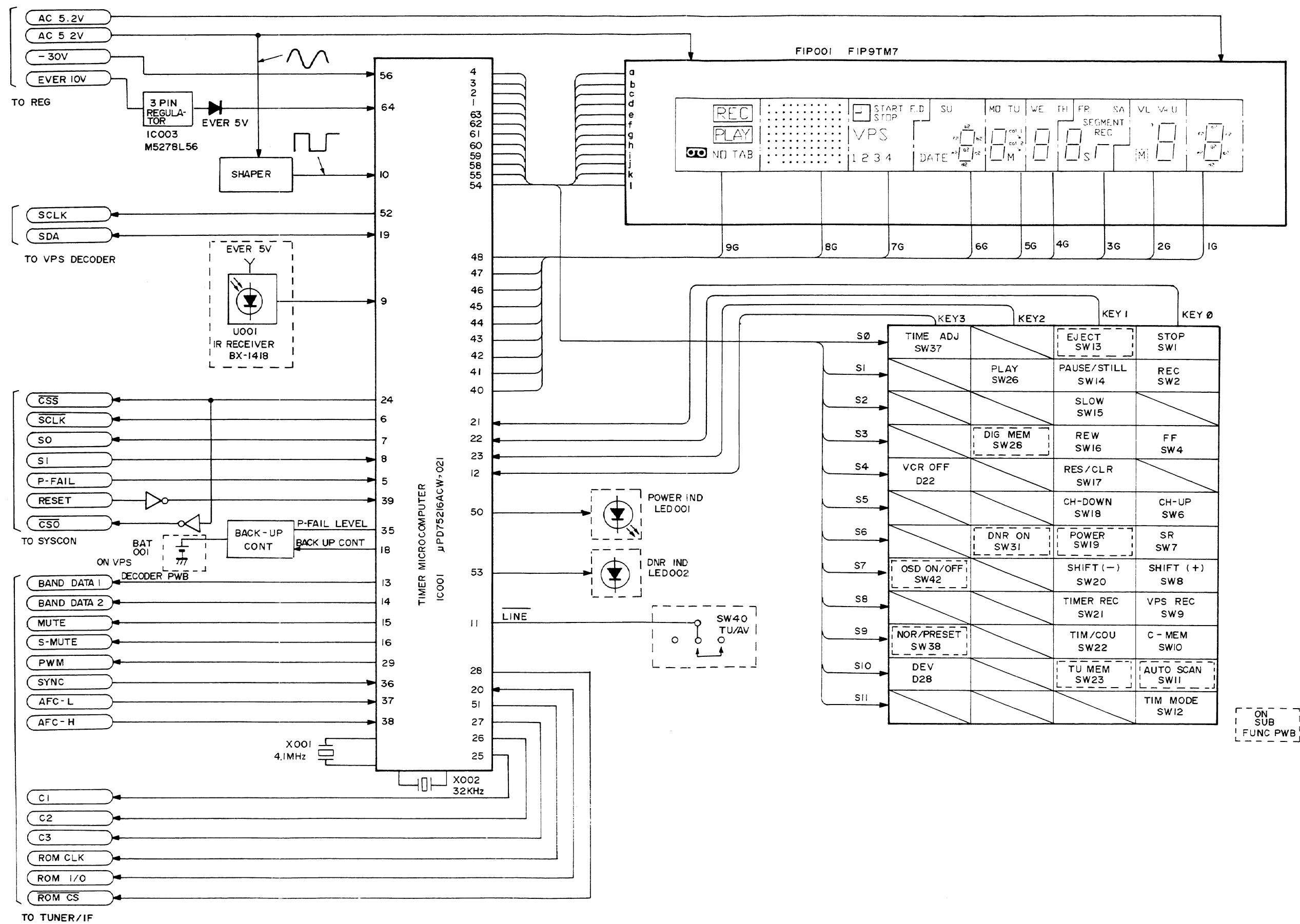
2-3. VIDEO/CHROMA BLOCK DIAGRAM



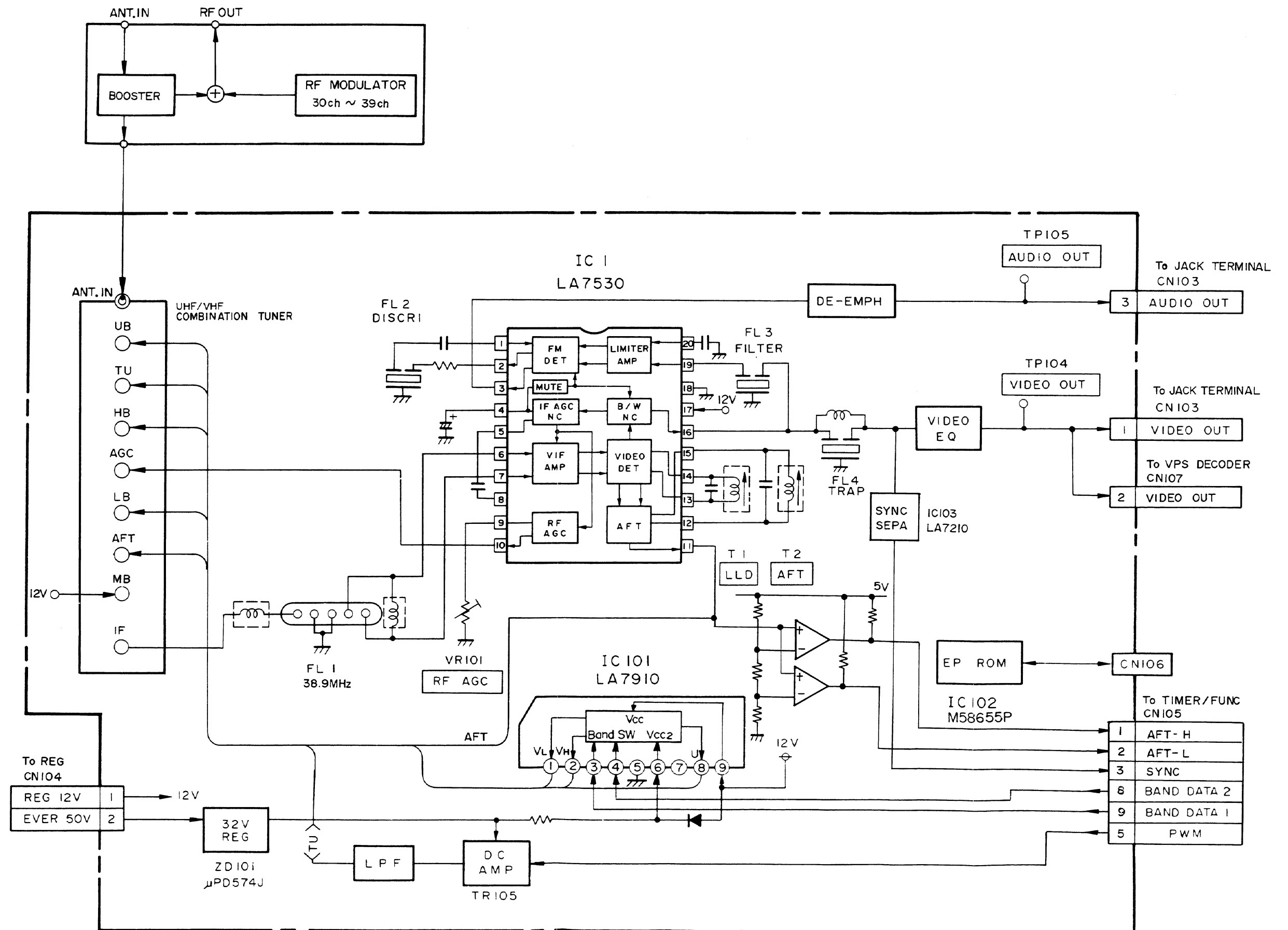
2-4. AUDIO BLOCK DIAGRAM



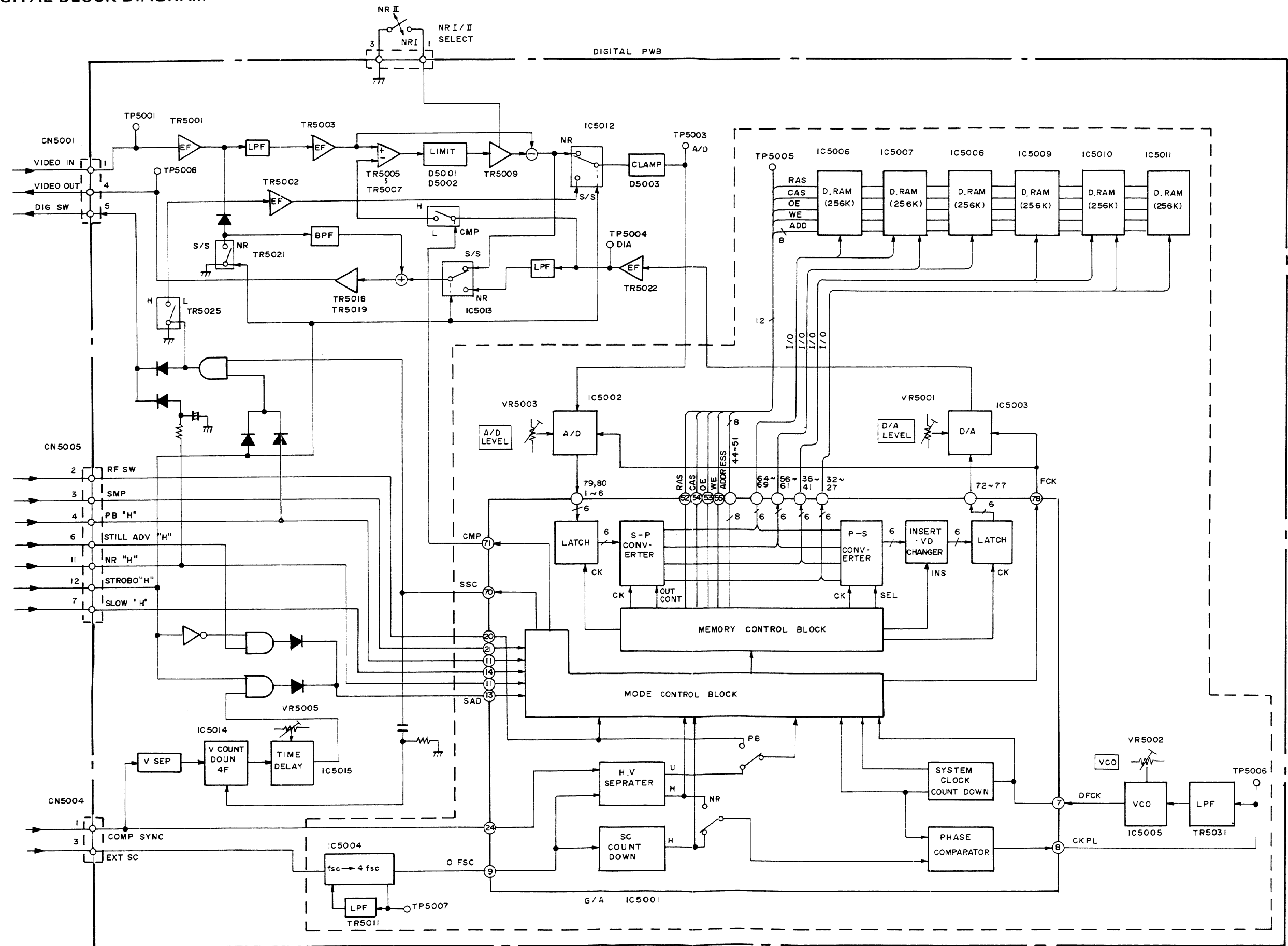
2-5. TIMER FUNCTION BLOCK DIAGRAM



2-6. TUNER/IF BLOCK DIAGRAM

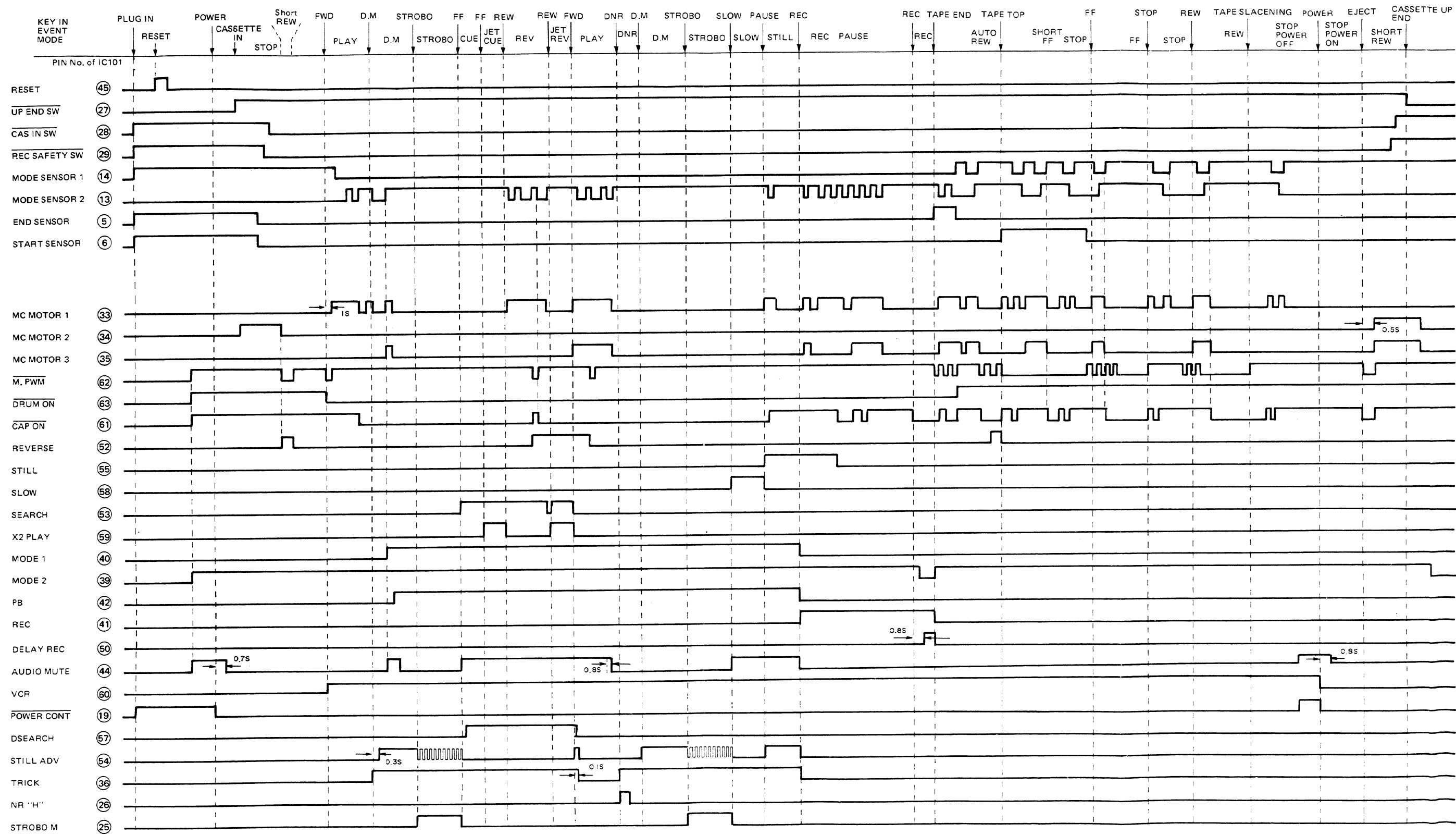


2-7. DIGITAL BLOCK DIAGRAM

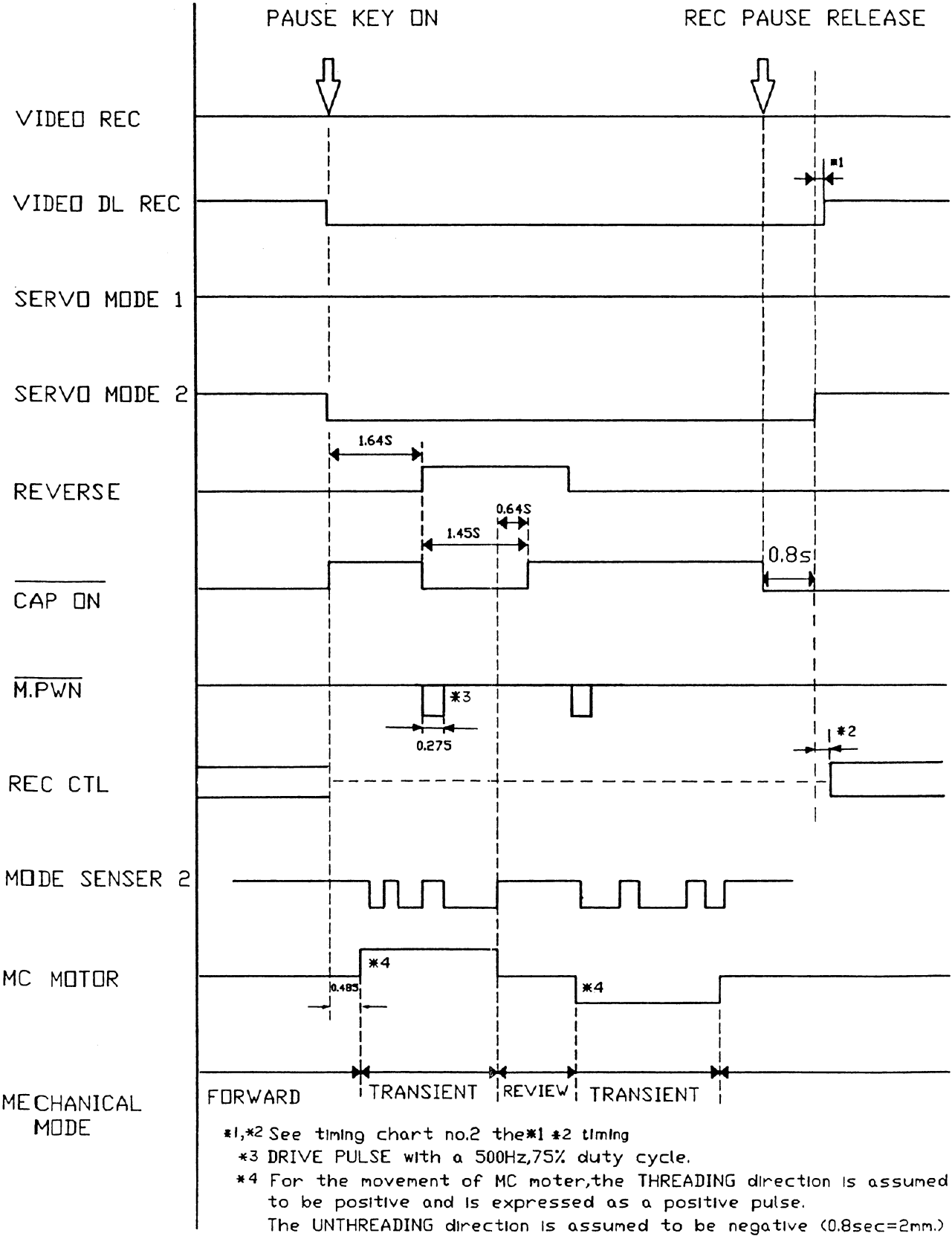


3. TIMING CHART

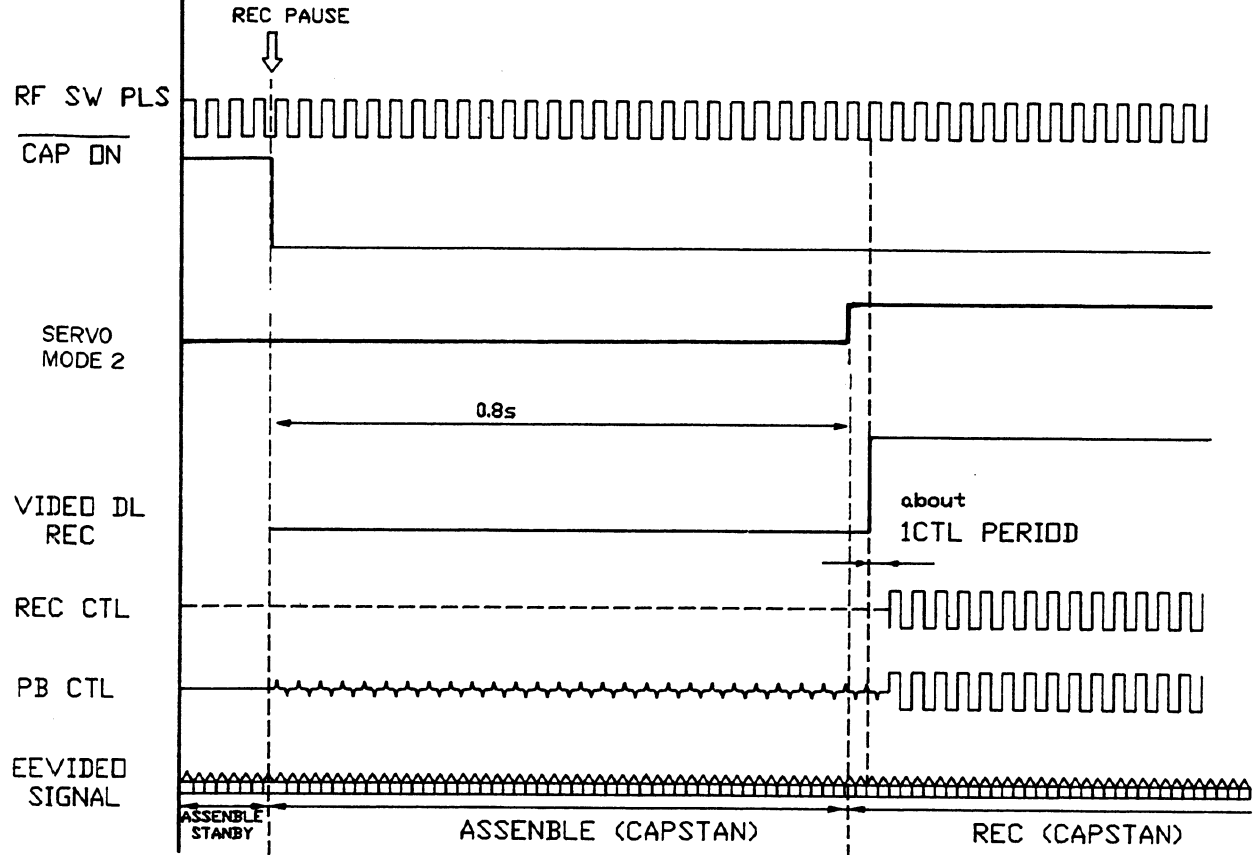
3-1. SYSTEM CONTROL TIMING CHART



3-2. ASSEMBLE RECORD TIMING CHART 1

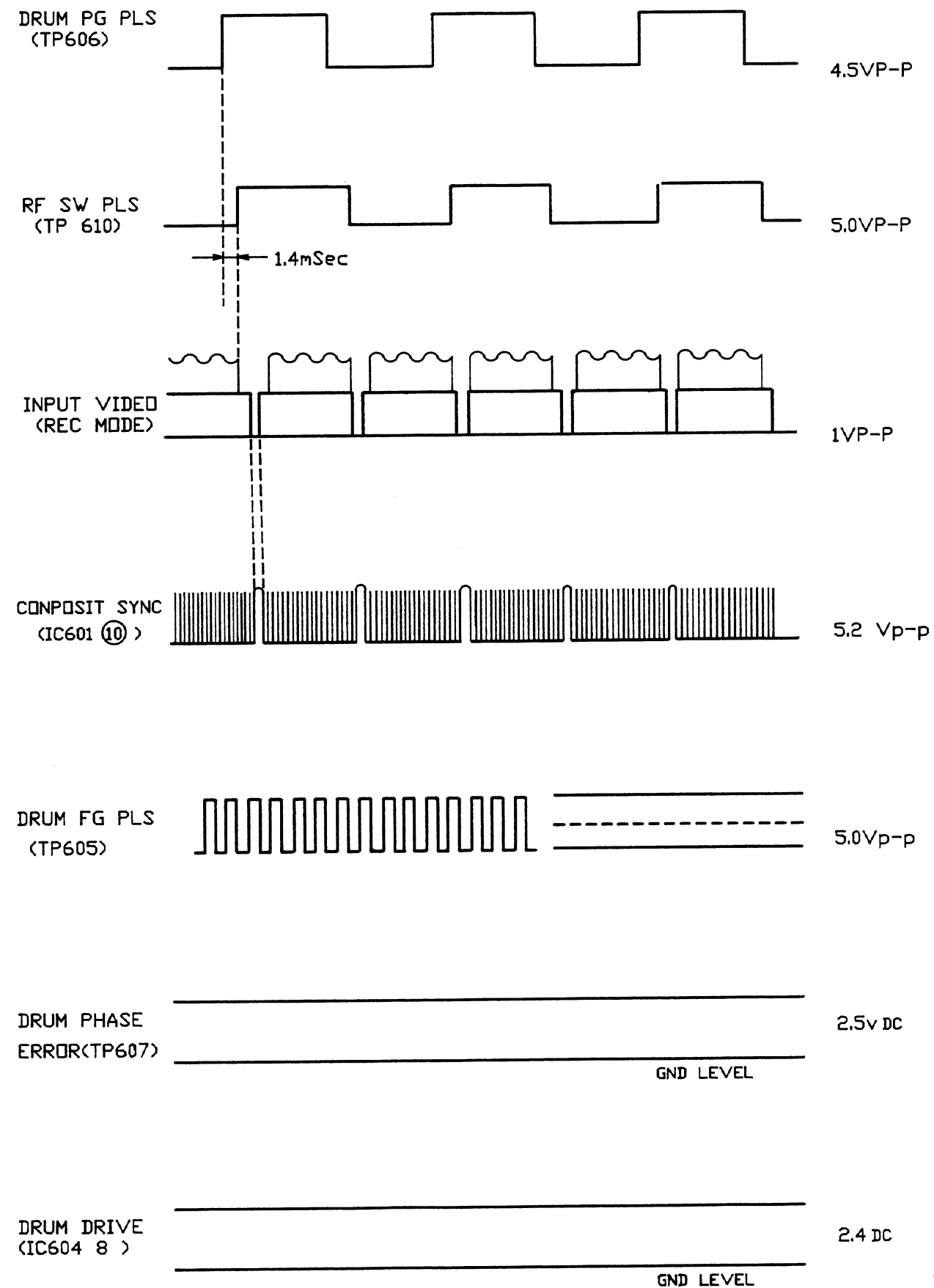


3-3. ASSEMBLE RECORD TIMING CHART 2

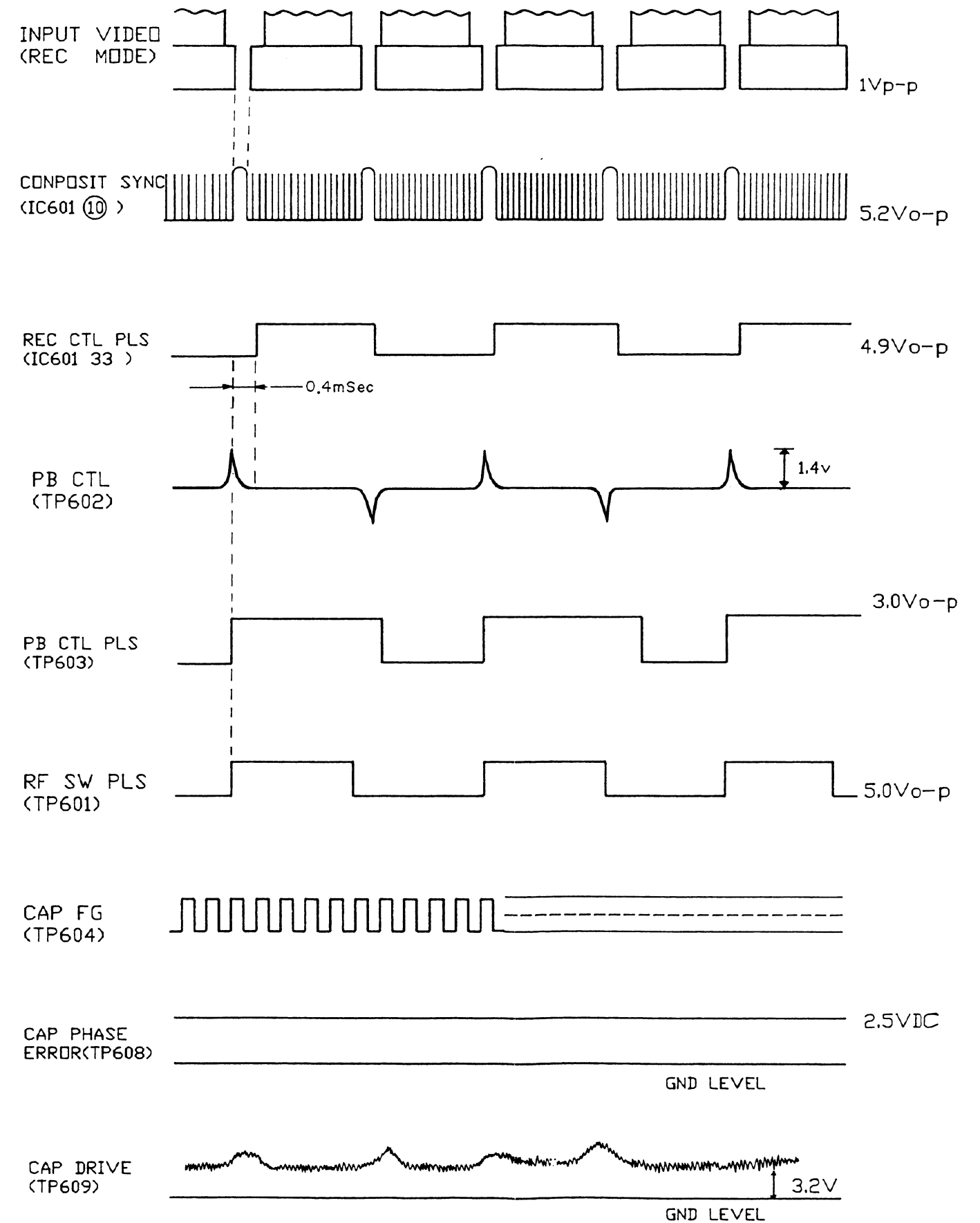


After the REC PAUSE is released, CAP ON is set low. Then, the CAPSTAN MOTOR starts rotating and the phase between REC CTL (VSYNC of the VIDEO SIGNAL) and PB CTL is matched. The connection operation is completed after about 0.8 second (about 24 frames) MODE 2 is set high and SERVO enters REC operation state. The first REC CTL pulse is not recorded, the pulse is recorded from the leading edge of the second CTL pulse. In addition, DL REC of the VIDEO is output synchronizing with the leading edge of RF SW PLS so that the joint part of VIDEO TRACK can be positioned within the vertical blanking. DL REC is a control signal for the REC AMP recording current.

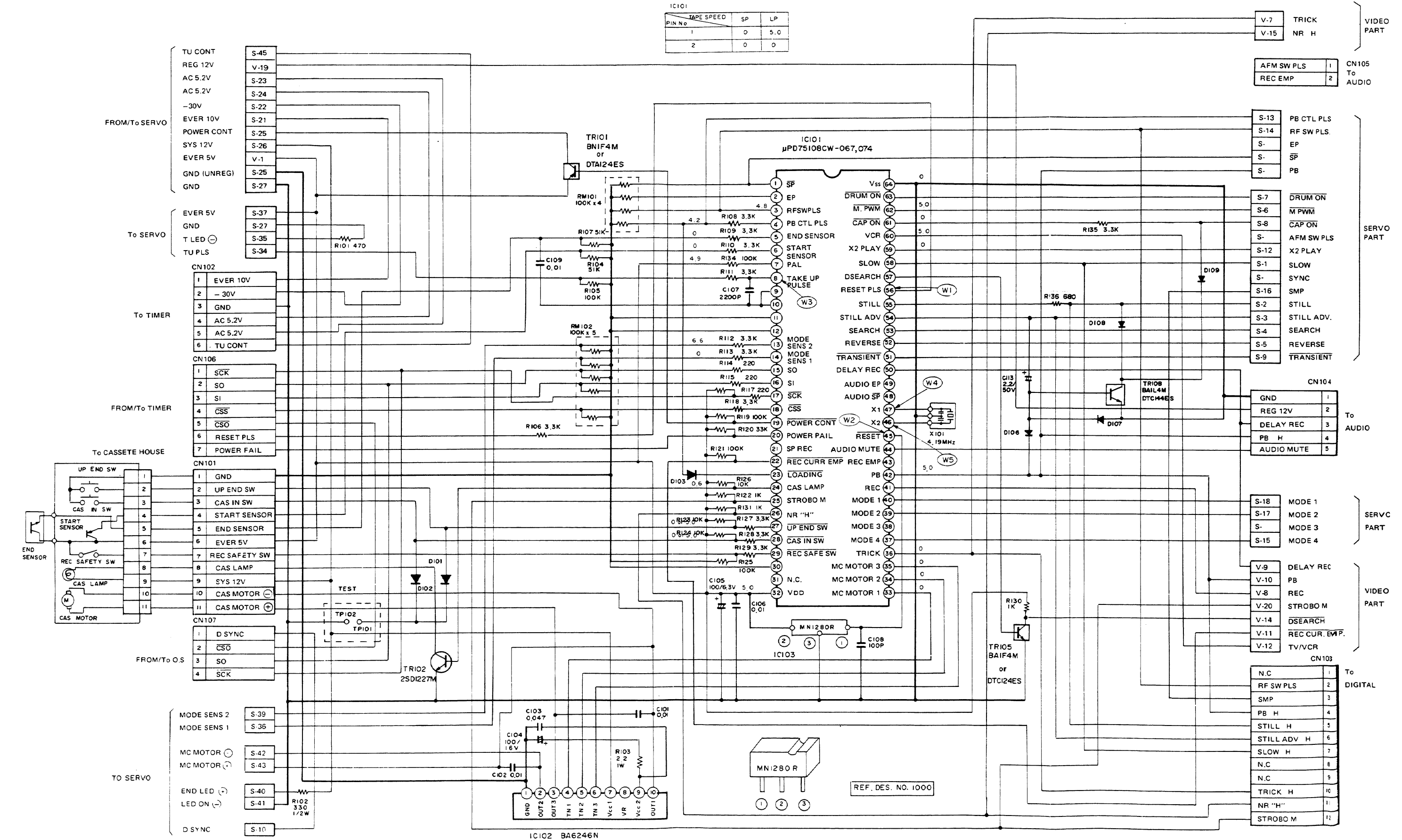
3-4. DRUM SERVO TIMING CHART 1



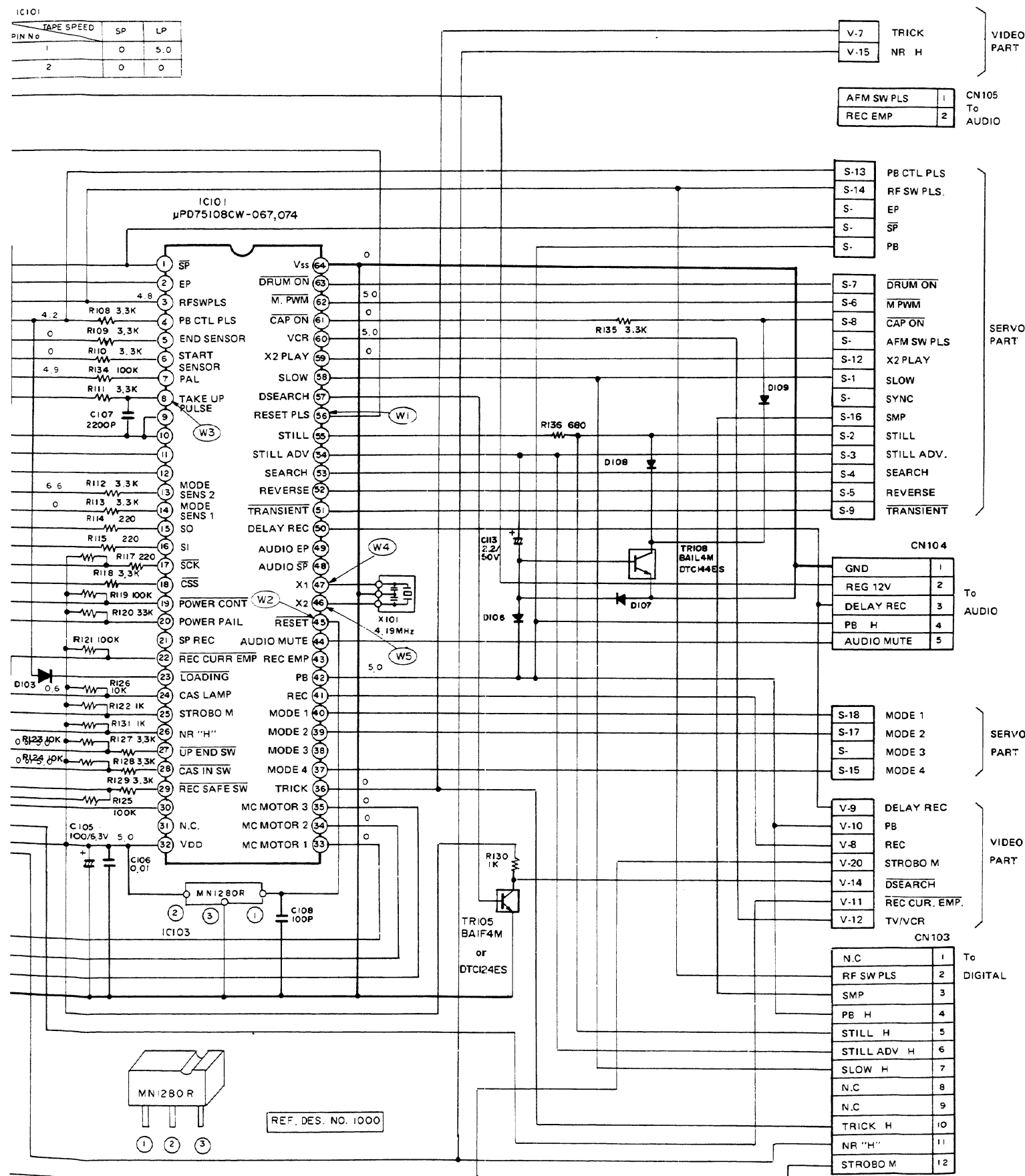
3-5. CAPSTAN SERVO TIMING CHART 2



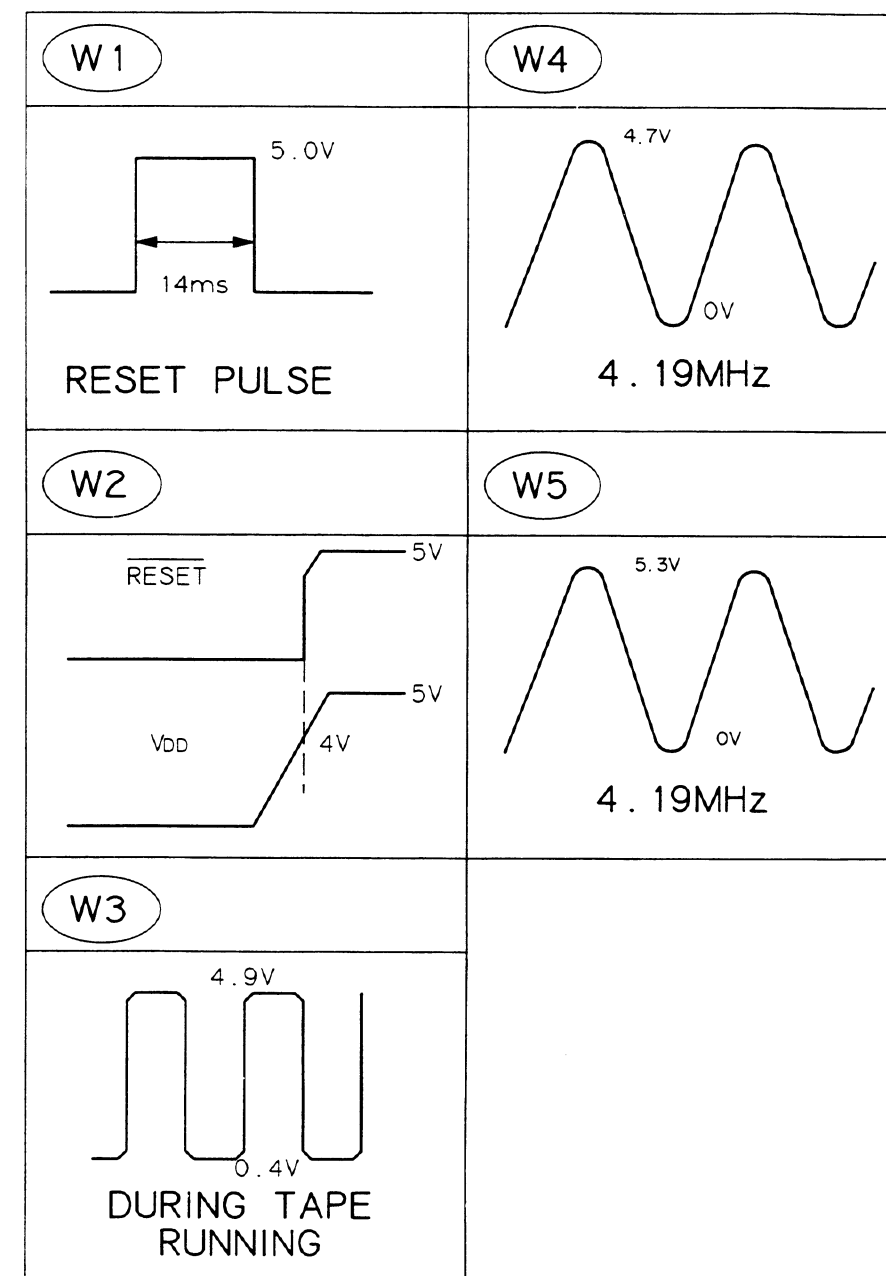
4-2. SYSCON SCHEMATIC DIAGRAM



IC101	TAPE SPEED	SP	LP
PIN NO			
1		0	5.0
2		0	0



SYSCON WAVEFORMS



IC101	PLAY	REC	REC PAUSE	STOP
PIN NO				
1	0	4.9V	4.9V	4.9V
2	0	4.9V	0	0

IC101	REC SPEED SW	SP	LP	EP
PIN NO				
1	0	4.8V	4.8V	4.8V
2	0	0	0	4.8V
3	0	4.9V	0	0
4	0	0	4.9V	4.9V

MOTOR1,2,3 OUT MODE	MODE/CAS	MODE/CAS	MODE/CAS	CASSETTE	MODE
MOTOR1	MOTOR2	MOTOR3	MOTOR	MOTOR	MOTOR
0	0	0	STOP	STOP	STOP
4.8V	0	0	STOP	FORWARD	FORWARD
4.8V	0	4.8V	STOP	REVERSE	REVERSE
0	4.8V	0	CAS.DOWN	STOP	STOP
0	4.8V	4.8V	CAS.UP	STOP	STOP

(NOTE)

- IC101 μPD75108CW-067 is used in MP0001 up to 9500.
- IC101 μPD75108CW-074 is used in MP9501 and up. In the same way as the change was made to IC101 CW-074, the following parts are deleted.

- Transistor TR108 BA1L4M or DTC144ES
- Diodes D106, D107, D108, D109
- Capacitor C113 2.2u, 50V
- Resistors R135, R136 (Red shaded parts)

SE

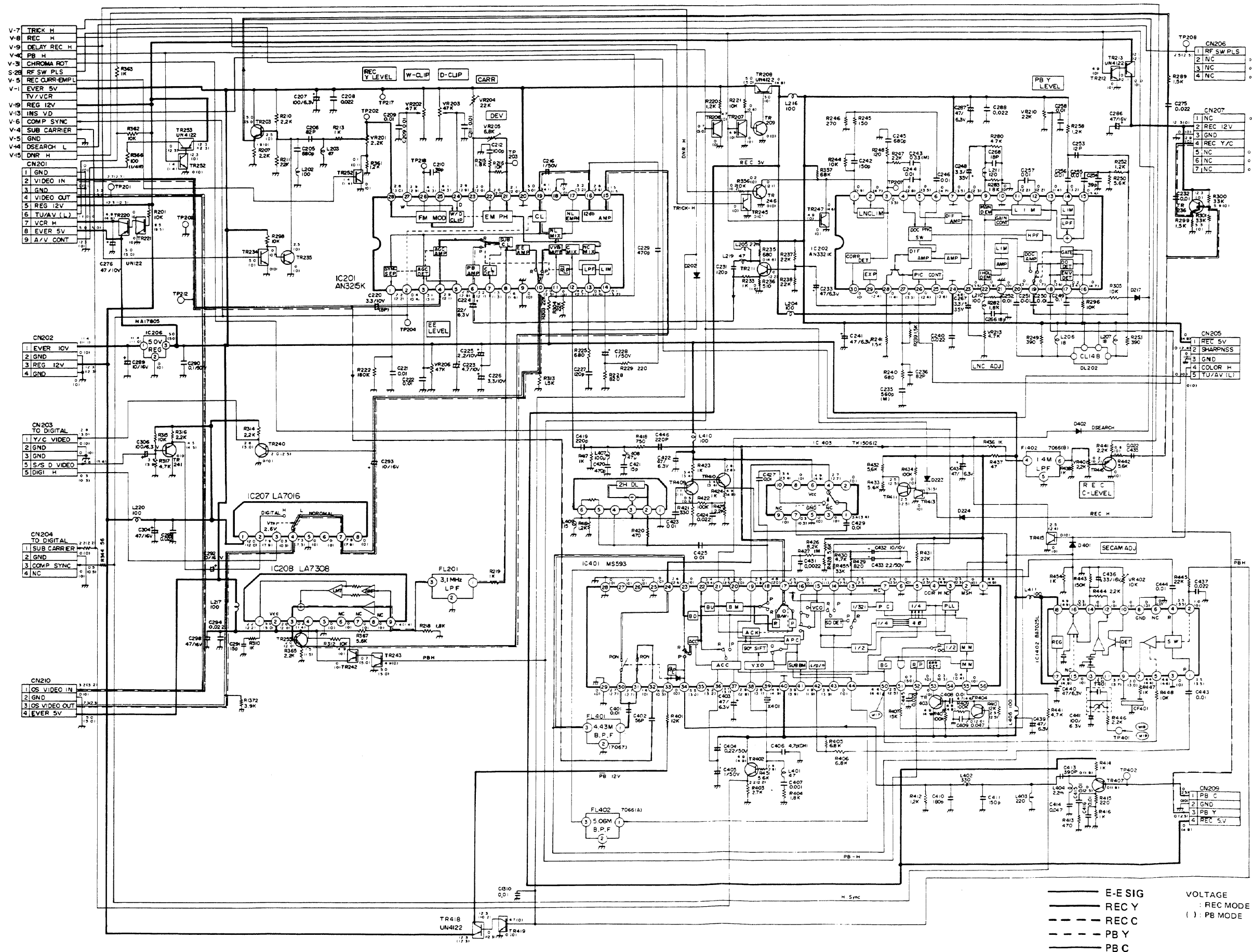




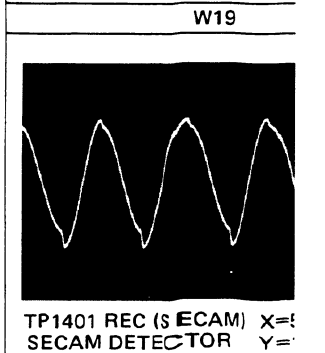
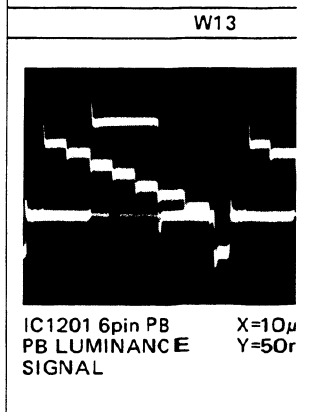
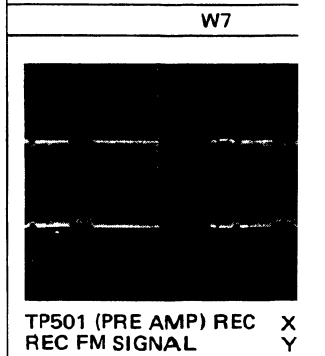
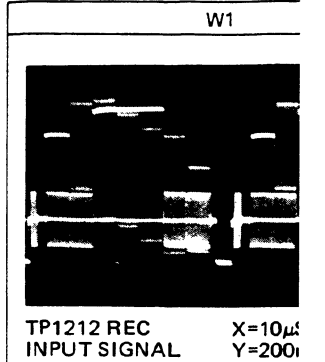
CAPSTAN SERVO SIGNAL

CTL	---	PHASE COMPARISON SIGNAL
CAPSTAN FC	---	SPEED COMPARISON SIGNAL
CAPSTAN PD	---	PHASE ERROR SIGNAL
CAPSTAN FV	---	SPEED ERROR SIGNAL

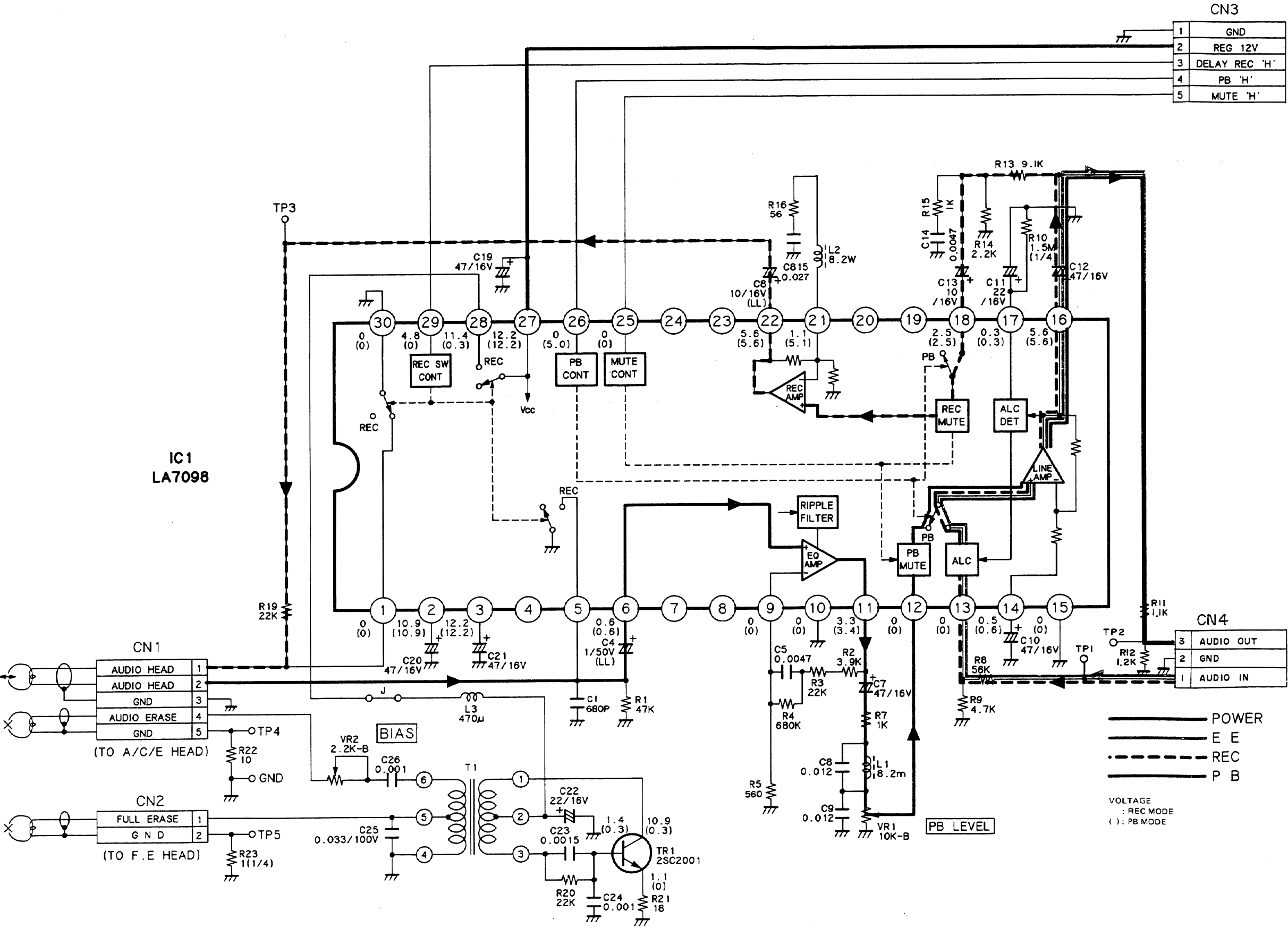
4-4. VIDEO/CHROMA SCHEMATIC DIAGRAM



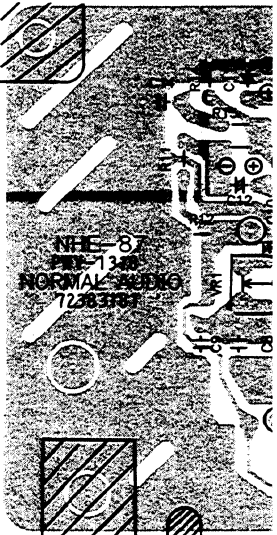
VIDEO WAVEFORMS



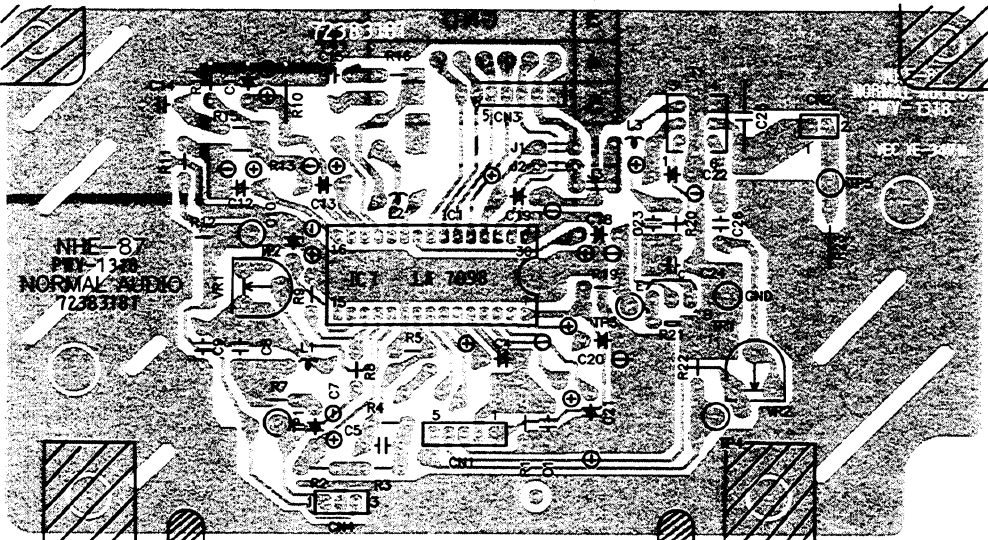
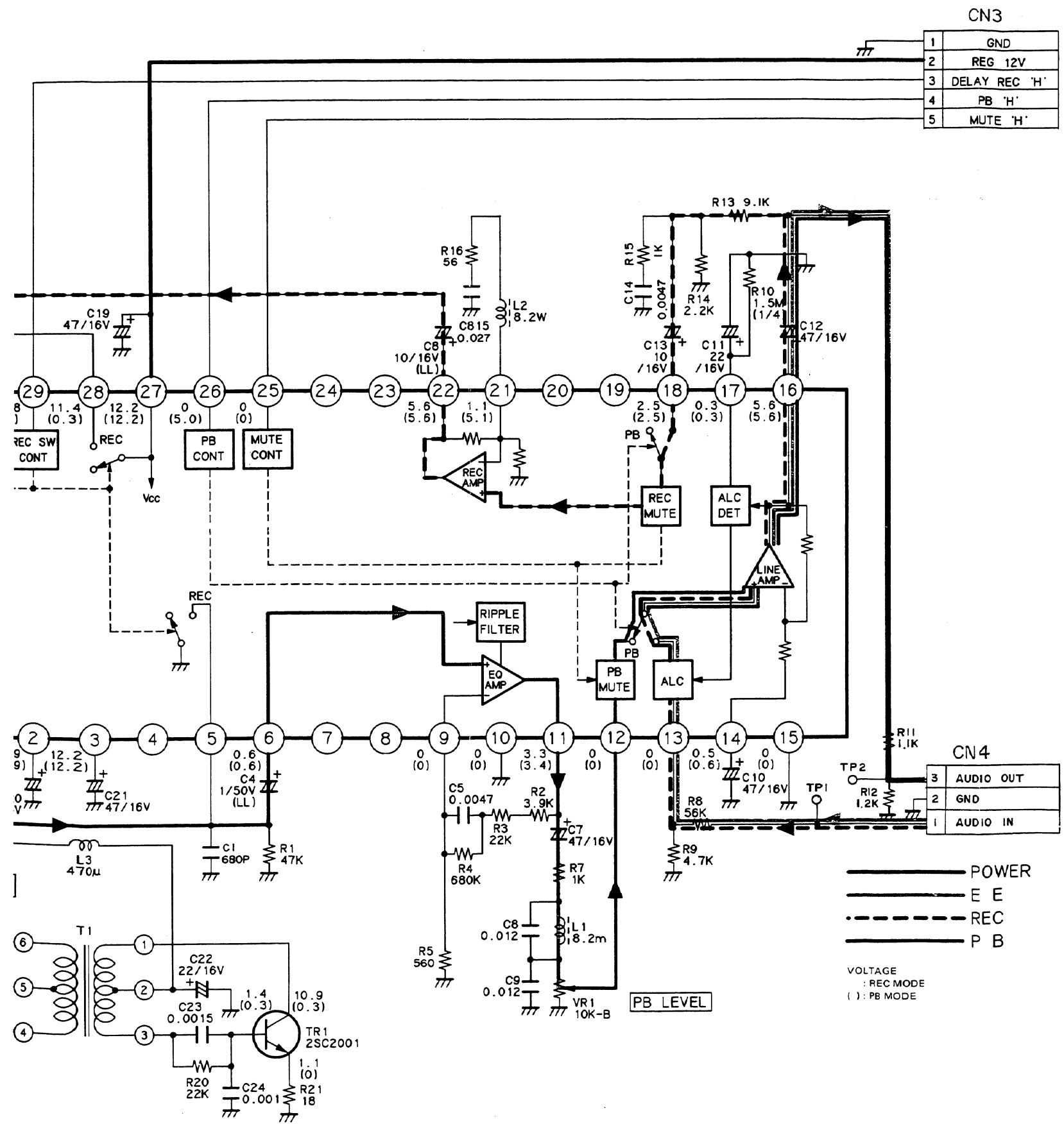
4-6. AUDIO SCHEMATIC DIAGRAM



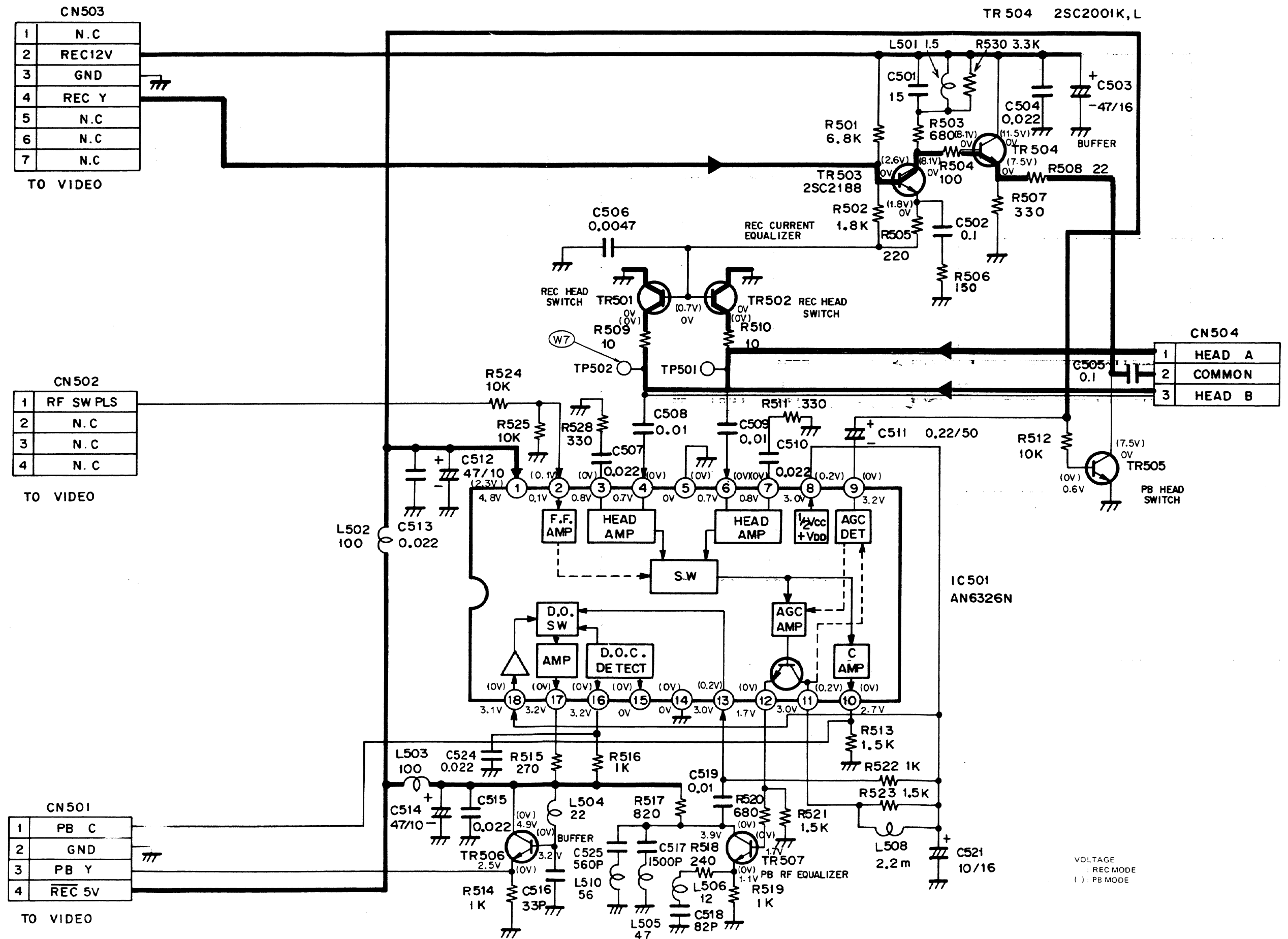
4-7. AUDIO CIRC

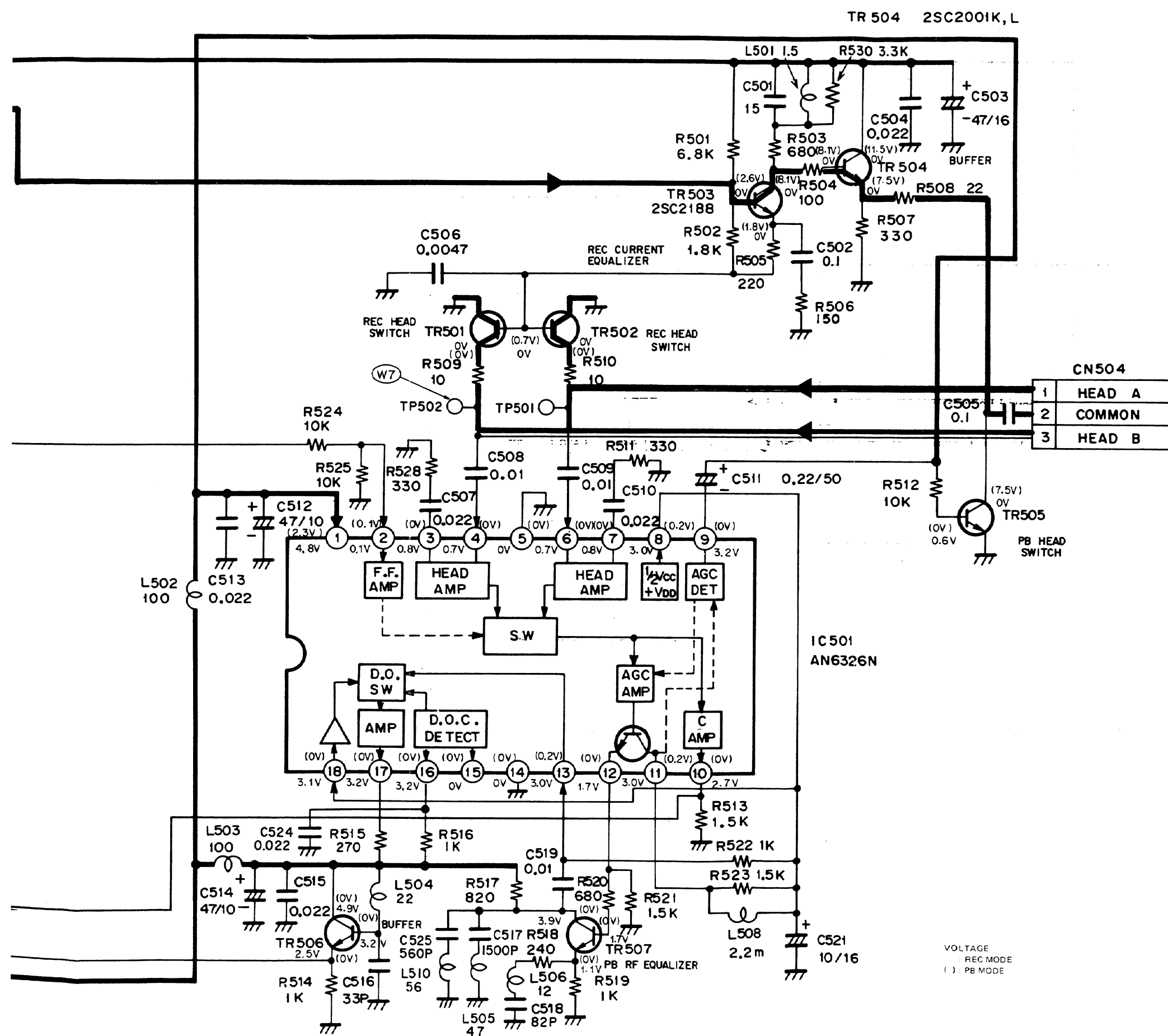


4-7. AUDIO CIRCUIT BOARD

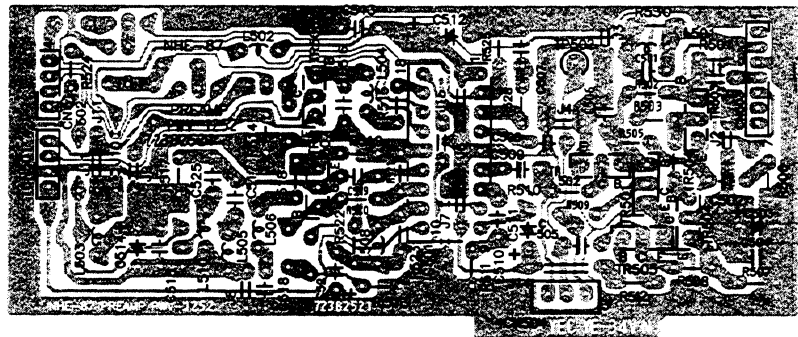


4-8. PRE AMP SCHEMATIC DIAGRAM

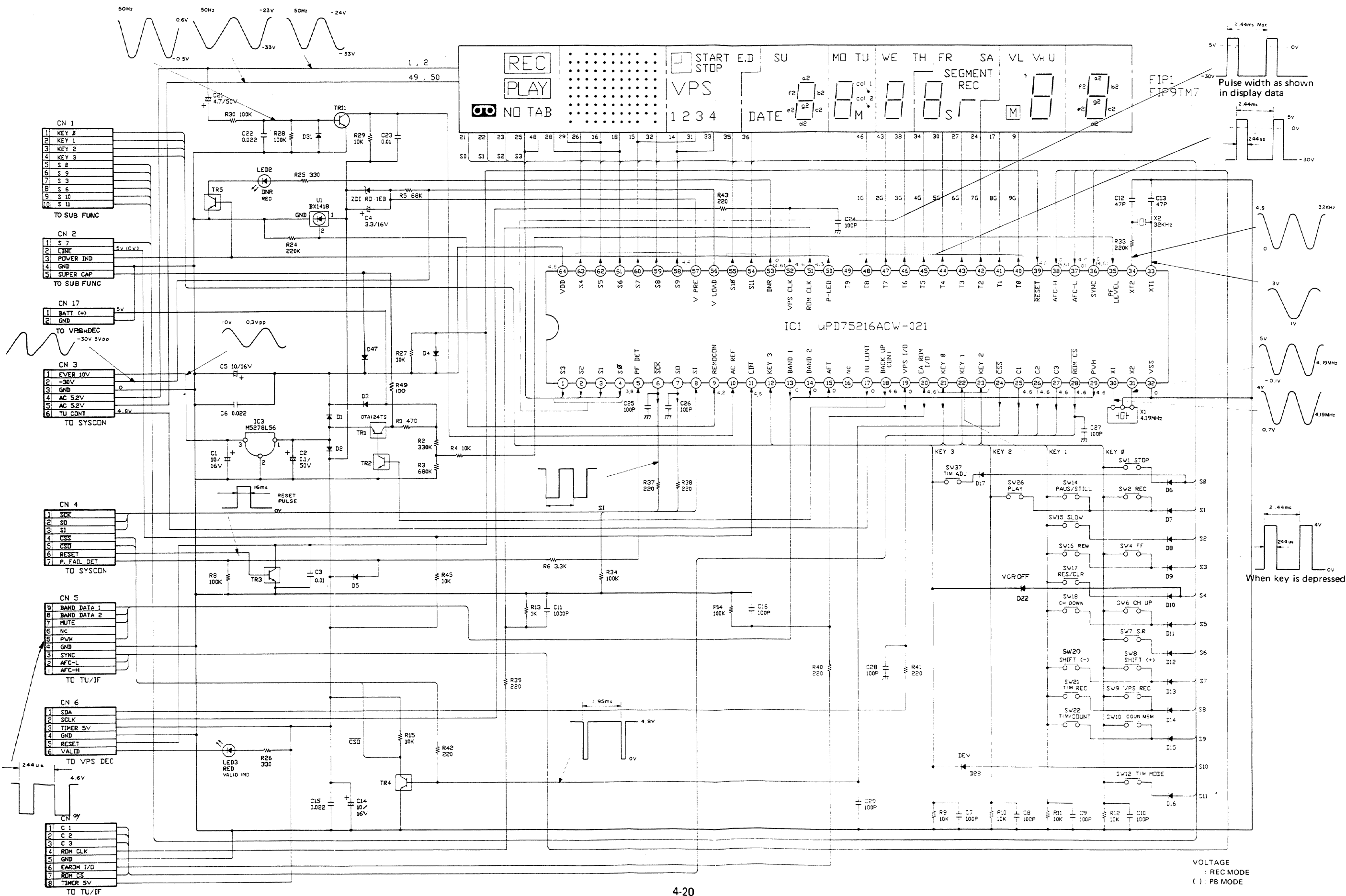




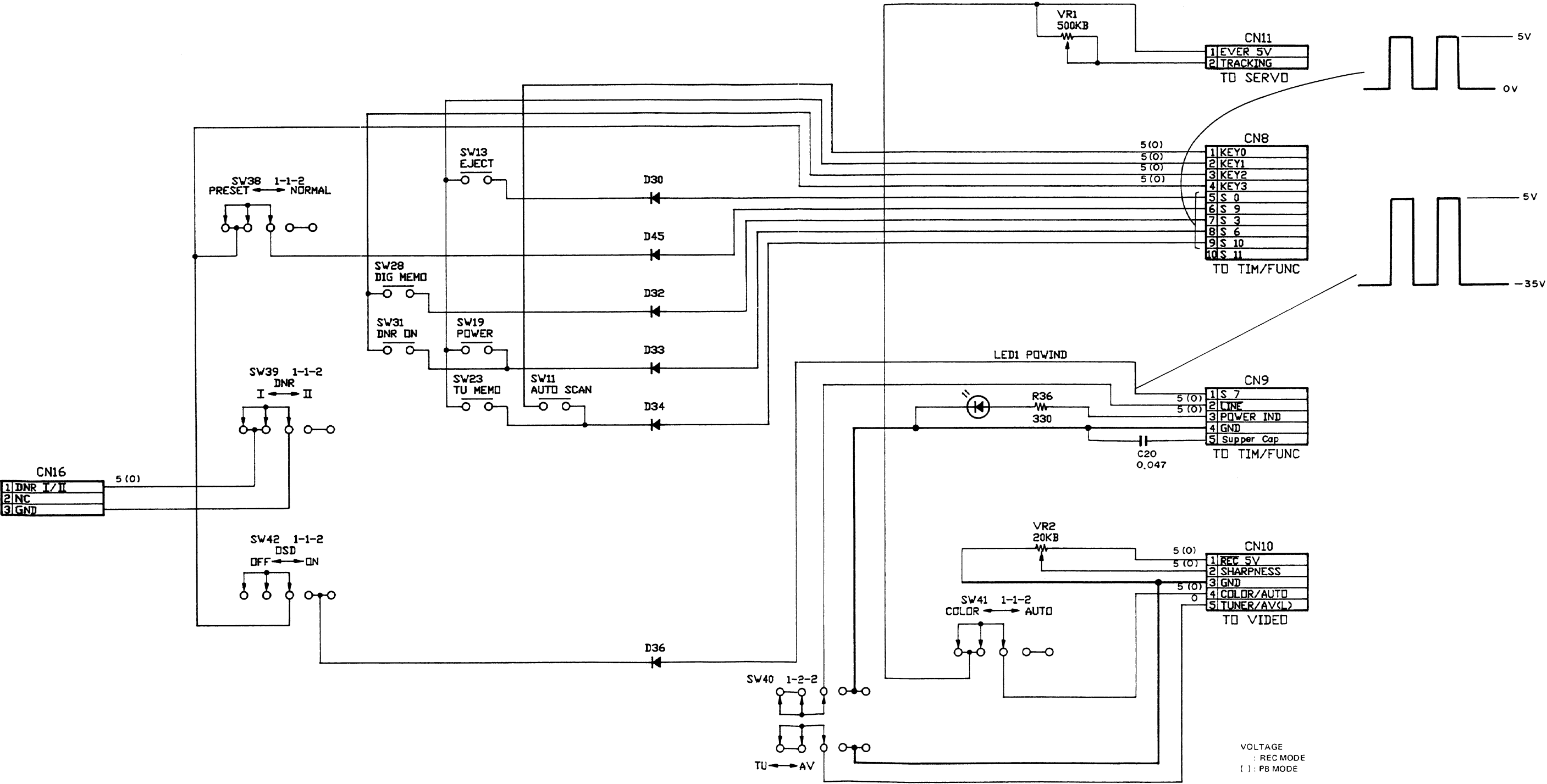
4-9. PRE AMP CIRCUIT BOARD



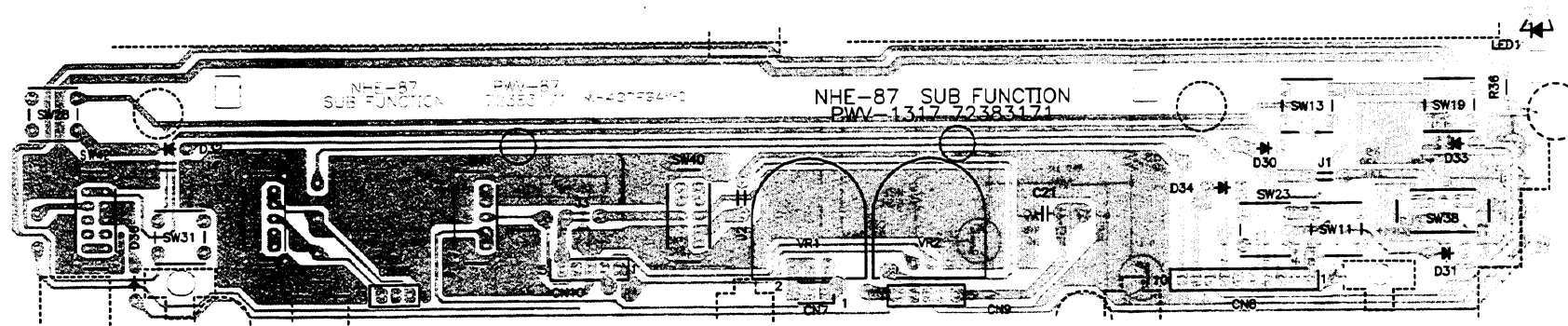
4-10. TIMER FUNCTION SCHEMATIC DIAGRAM



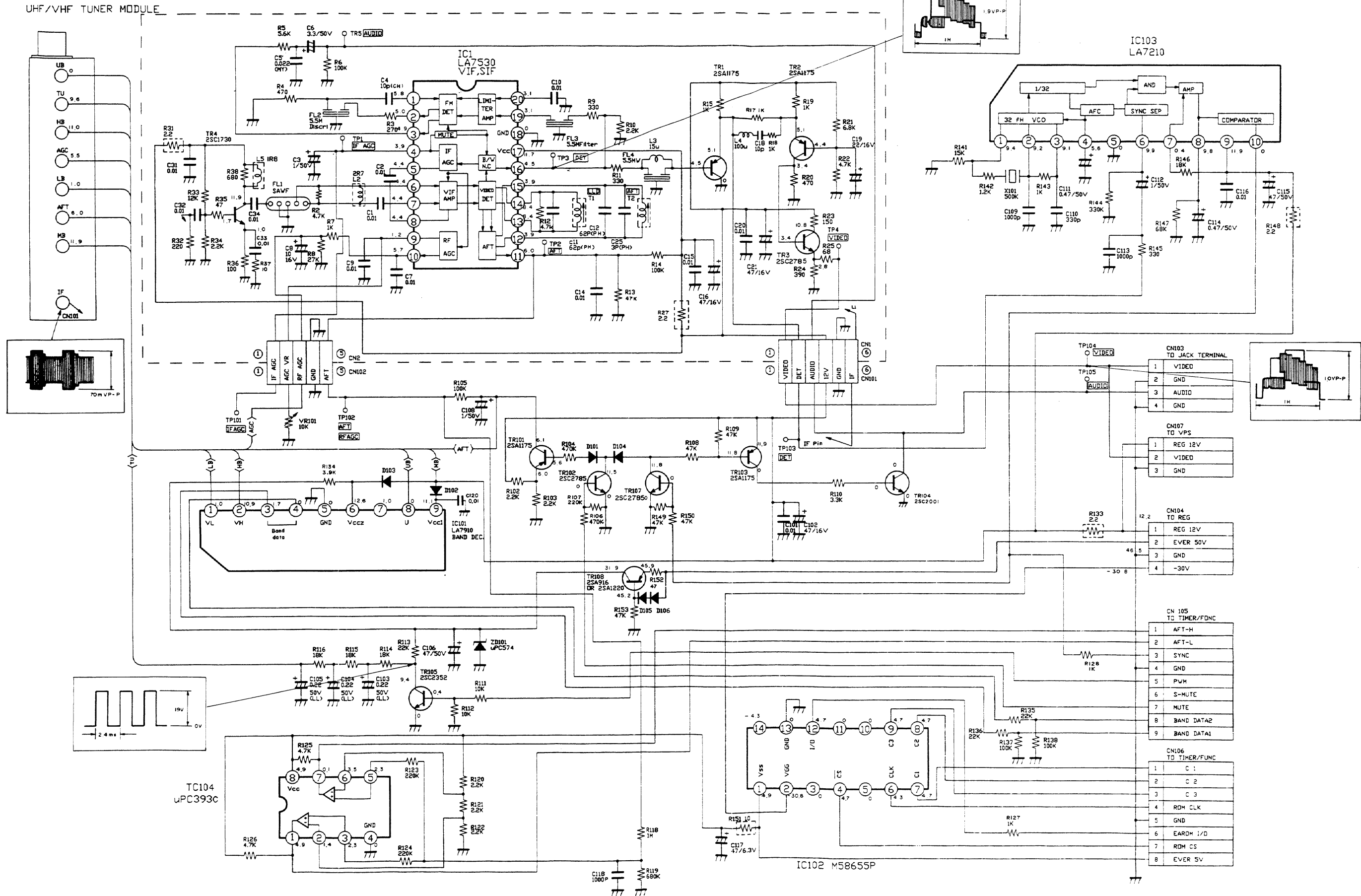
4-12. SUB FUNCTION SCHEMATIC DIAGRAM



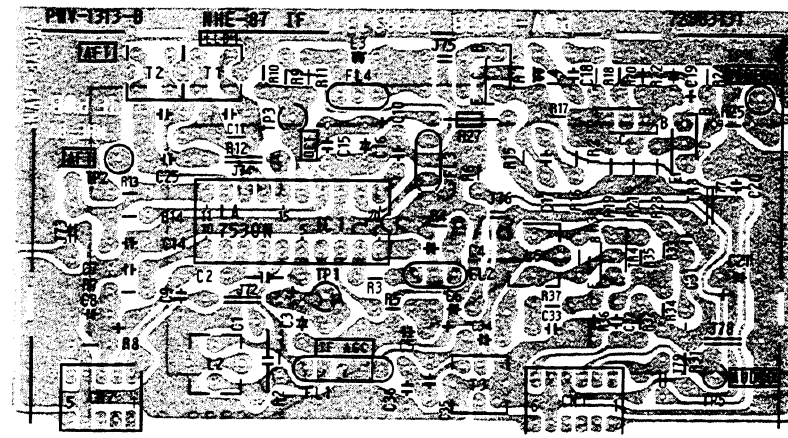
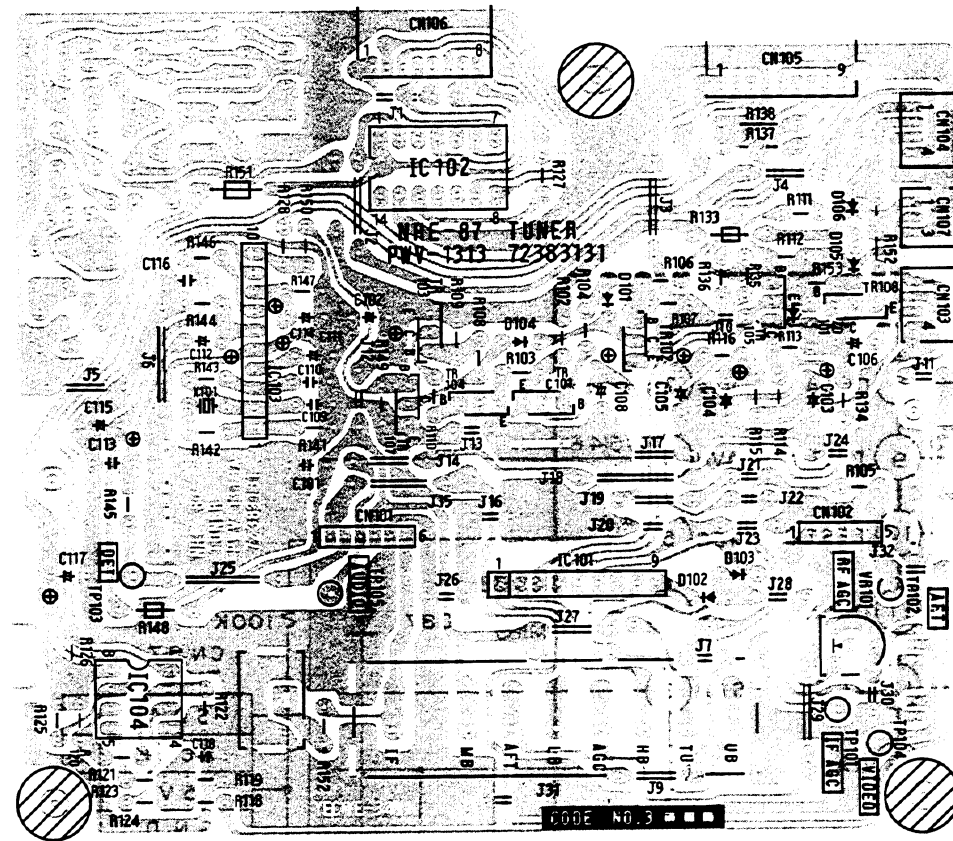
4-13. SUB FUNCTION CIRCUIT BOARD



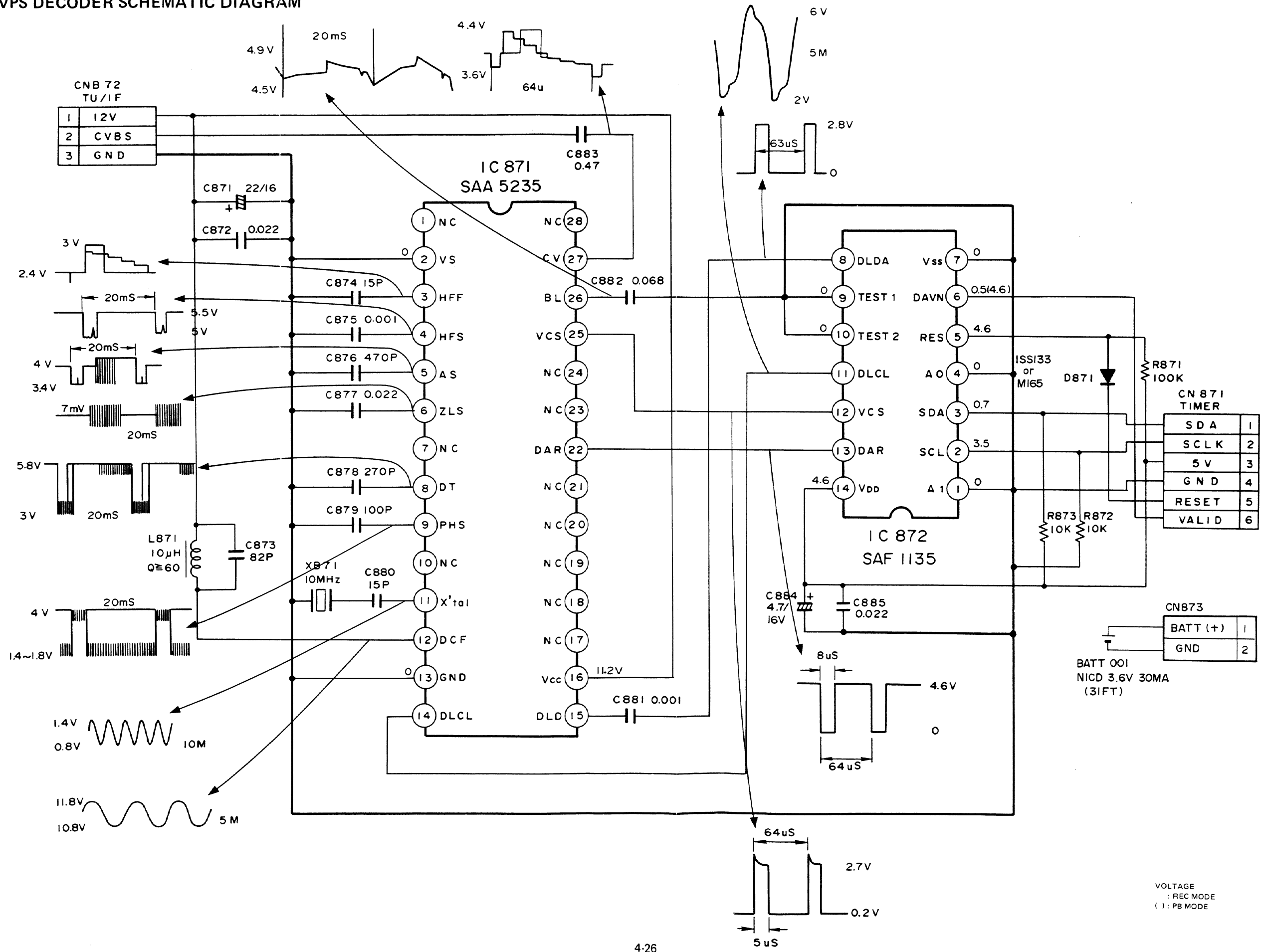
4-14. TUNER/IF SCHEMATIC DIAGRAM



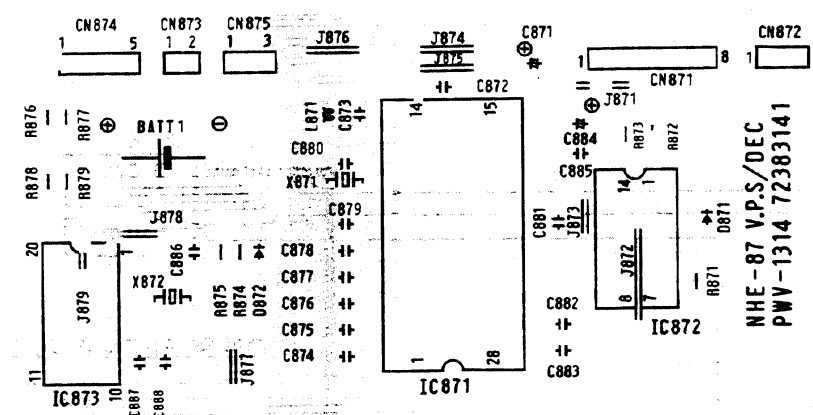
4-15. TUNER/IF CIRCUIT BOARD



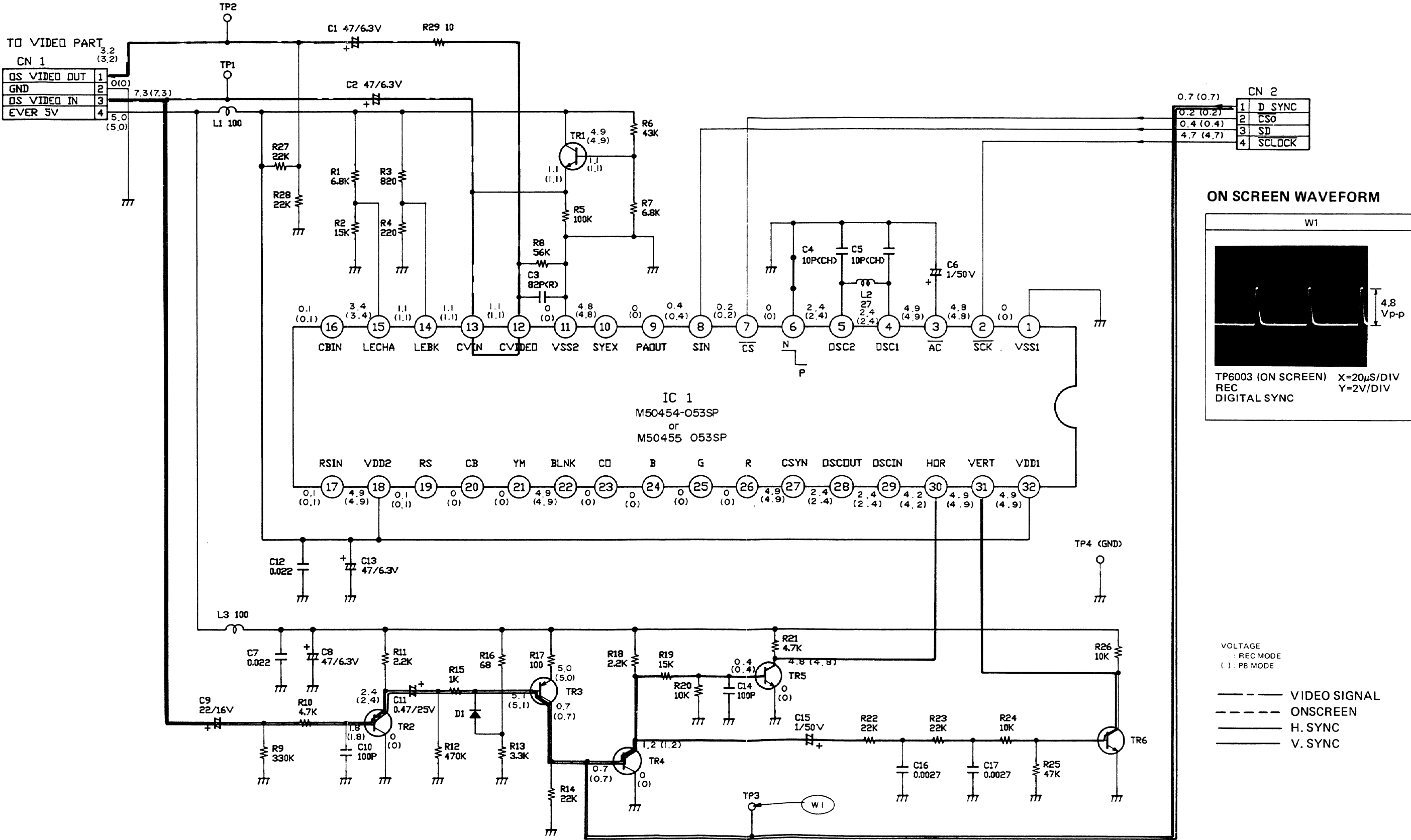
4-16. VPS DECODER SCHEMATIC DIAGRAM



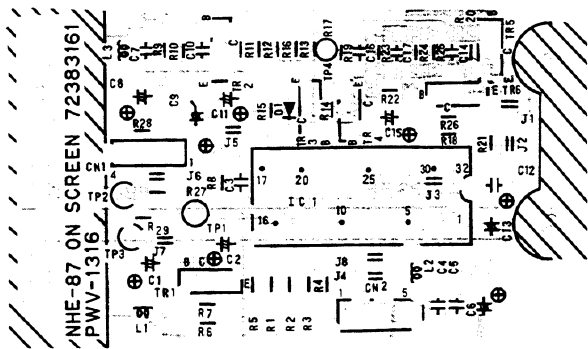
4-17. VPS DECODER CIRCUIT BOARD



4-18. ON SCREEN SCHEMATIC DIAGRAM



4-19. ON SCREEN CIRCUIT BOARD



ON NR I
OFF NR II

IC5001
IC5002
IC5003
IC5004
IC5005
IC5006
IC5007
IC5008
IC5009
IC5010
IC5011
IC5012
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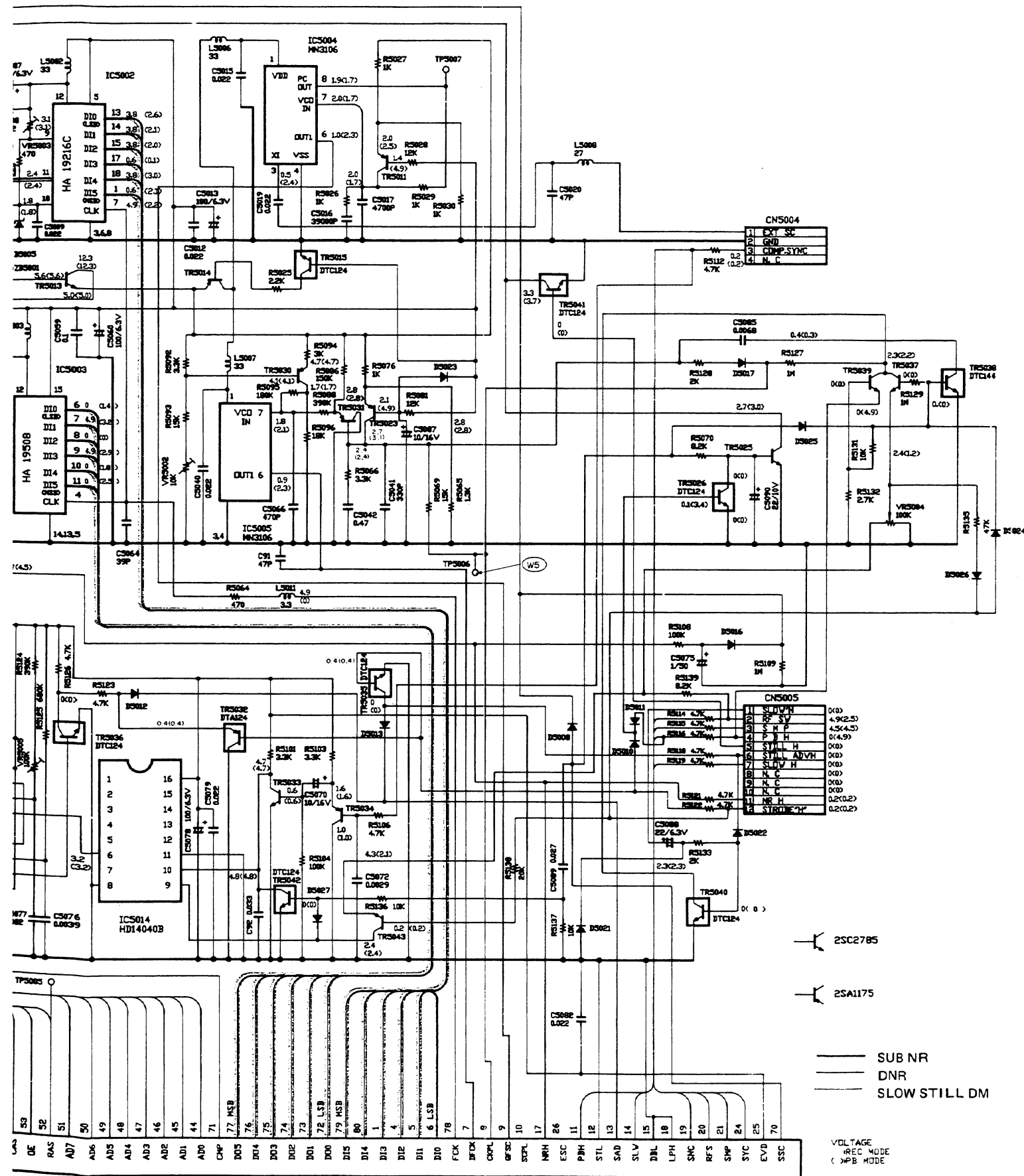
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TP5100

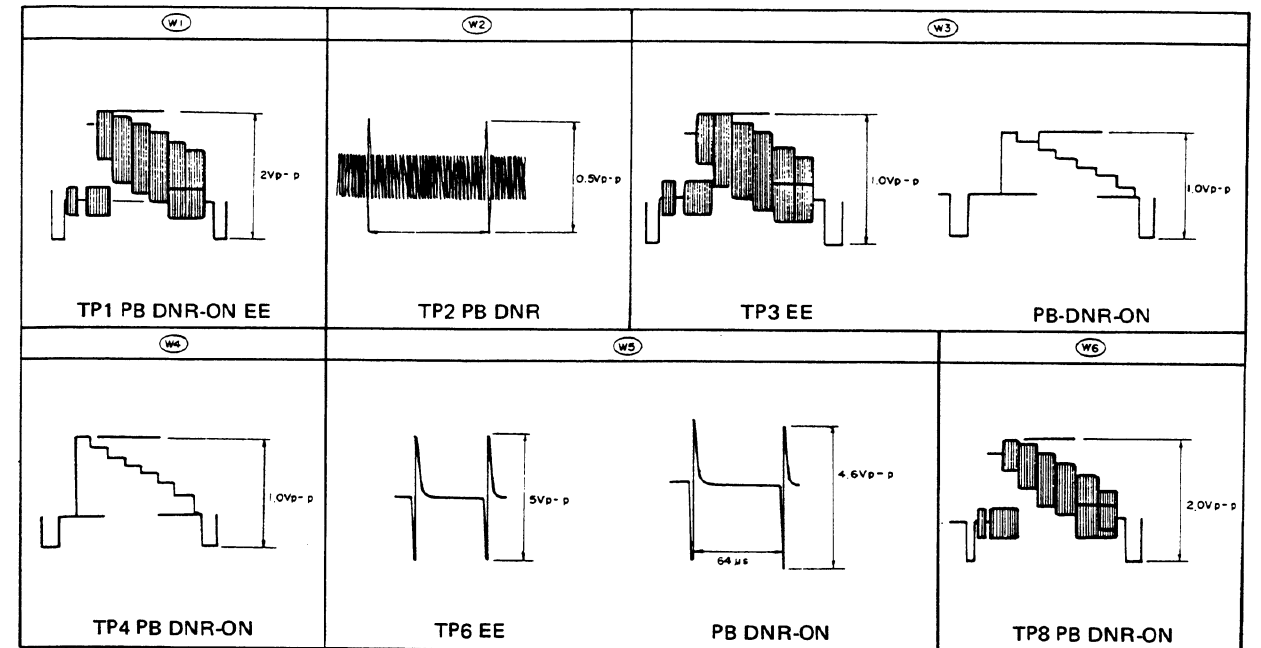
2SC2785
2SA1175

SUB NR
DNR
SLOW STILL DM

VOLTAGE
REC MODE
P MODE



DIGITAL WAVEFORMS



4-21. DIGITAL CIRCUIT BOARD



AC 220V 50Hz

SW 1

C92 0.1

L91

F91 250V 2A

AC10.3 (AC10.5)

AC17.3 (AC18.4)

AC43.7 (AC44.1)

AC5.3 (AC5.3)

D2 ERA15-02

D3 ERA15-02

R4 510 1W

TR10 2SB548

D10 -57.2 ERA15-02 (-57.6)

D4 11E1

R2 15K

C22 2200/35V

C23 1/100V

D11 IS2076A

C21 1/100V

C3 100/63V

C12 100/100V

C16 1/100V

TR3 2SC2390

R12 15K

TR1 2SB949

R17 4.3K

R5 17.4 (0.3)

R6 33K

R18 680

C13 1/50V

C4 47/25V

R7 4.3K

IC1 M5237L

R14 1.2K

R13 220

R15 10K

C15 0.1

TR12 2SB1038

R30 220

C5 3300/16V

TR11 AN1F4M

IC30 M5237L

R31 8.2K

R32 680

R33 4.3K

R34 4.3K

C33 1/50V

C32 47/16V

D9 IS2076A

D30 IS2076A

TR9 AA1A4M

C8 47/16V

IC2 PQ12R02

F1 250V 2A

AC15.9 (AC16.2)

C6 4700P

R20 22K

C7 3300/25V

C9 470/25V

TR5 2SD1266

R9 0.47 1W

C11 100P

TR8 2SC2785

R10 2.7K

TR7 2SD1286

TR6 AA1A4M

STOP: 0.6
PLAY: 2.8
FF: 7.4

STOP: 0.4, PLAY: 4.0, FF: 8.8

Voltages in parentheses: OPERATE OFF
Voltages not in parentheses: OPERATE ON
Both are in volts [V].

VOLTAGE
: REC MODE
(): PB MODE

CN3

1	EVER 10V
2	-28V
3	FIP 5.2V
4	FIP 5.2V
5	POWER CONT.
6	SYS 12V
7	GND
8	+18V
9	CAP. DRIVE.
10	CAP. CONT.
11	GND
12	T.U. CONT.

CN4

1	REG 12V
2	+50V
3	GND
4	-30V

CN61

1	REG 12V
2	GND
3	GND
4	REG 5V

CN5

1	EVER 10V
2	GND
3	REG 12V
4	GND

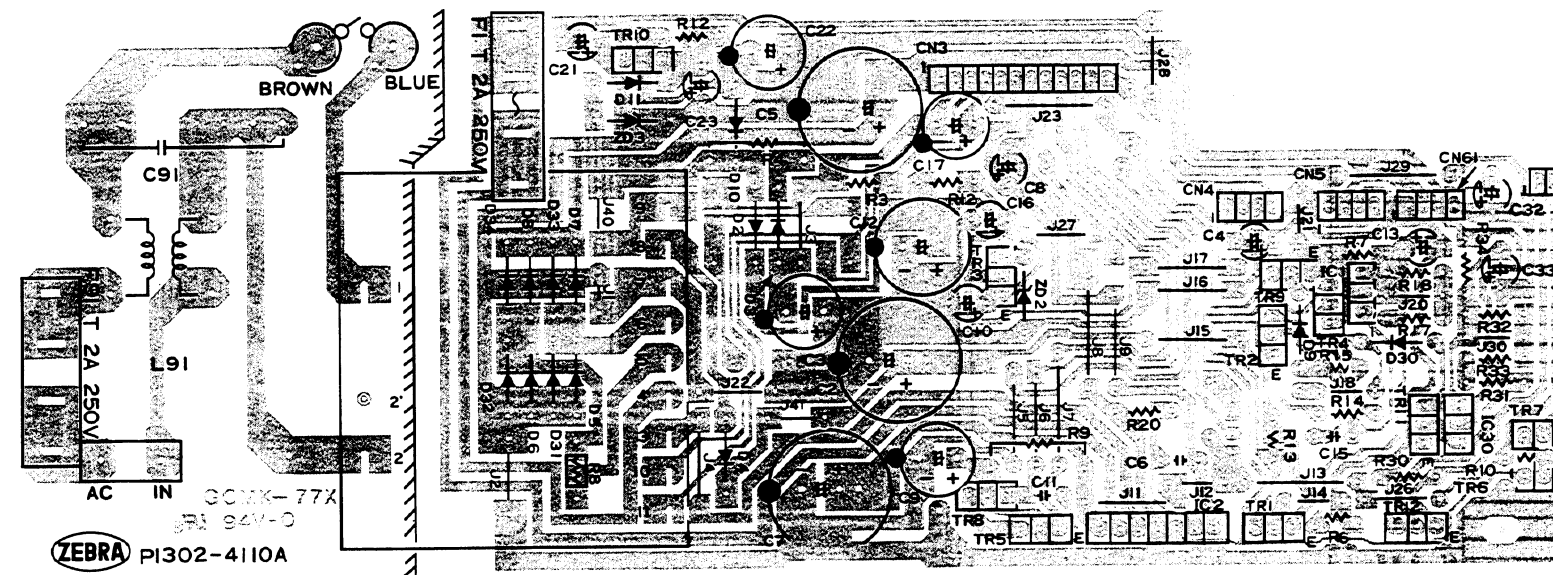
CN2

1	HEATER -
2	HEATER +

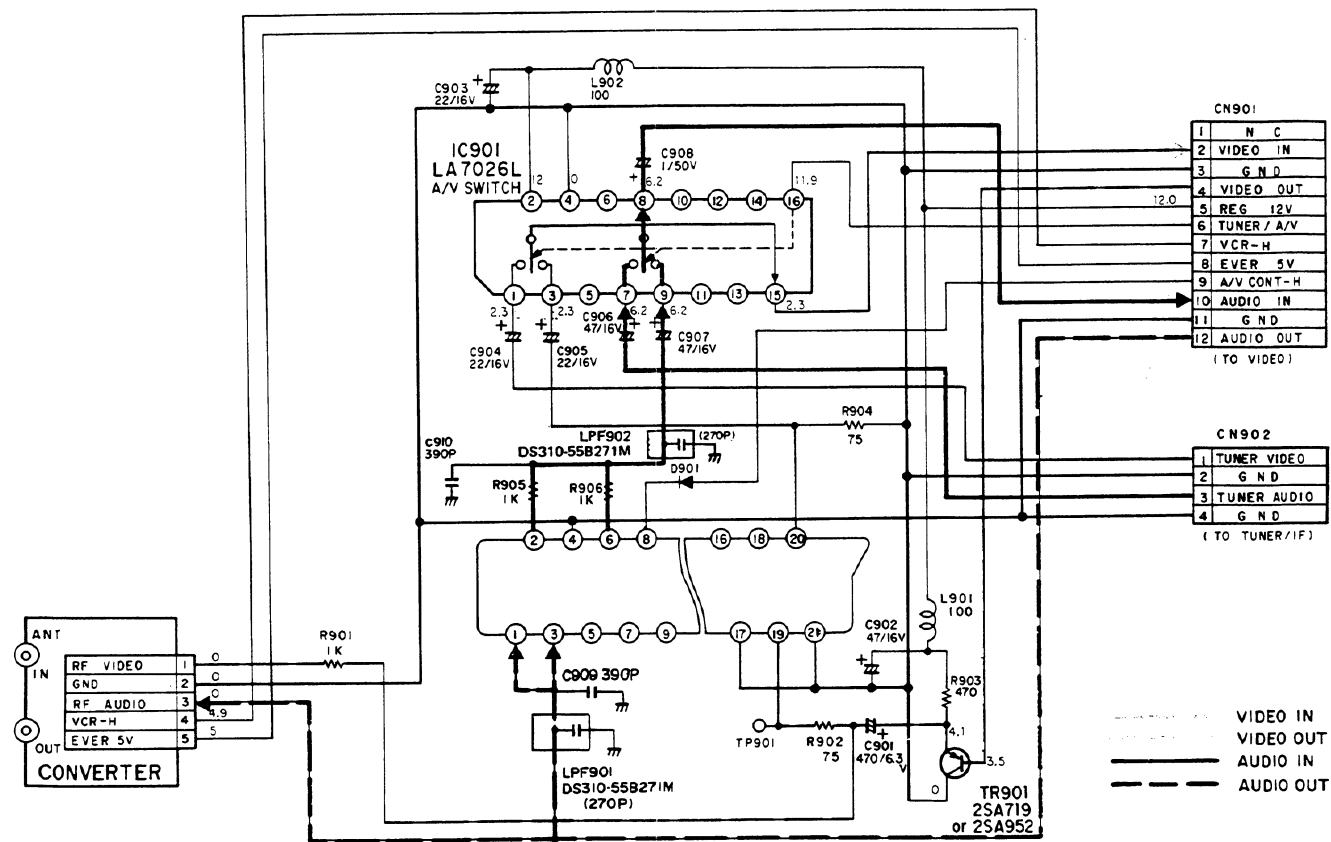
Legend:

- Unless otherwise specified, all resistors are 1/4W, and are expressed in [Ω].
- Capacitors are shown in [μF] except for those marked P which are shown in F.
- The resistance tolerance of R6, R7, and R17 is ±2%.
- The resistance tolerance of #1, R33, and R34 is ±2%.

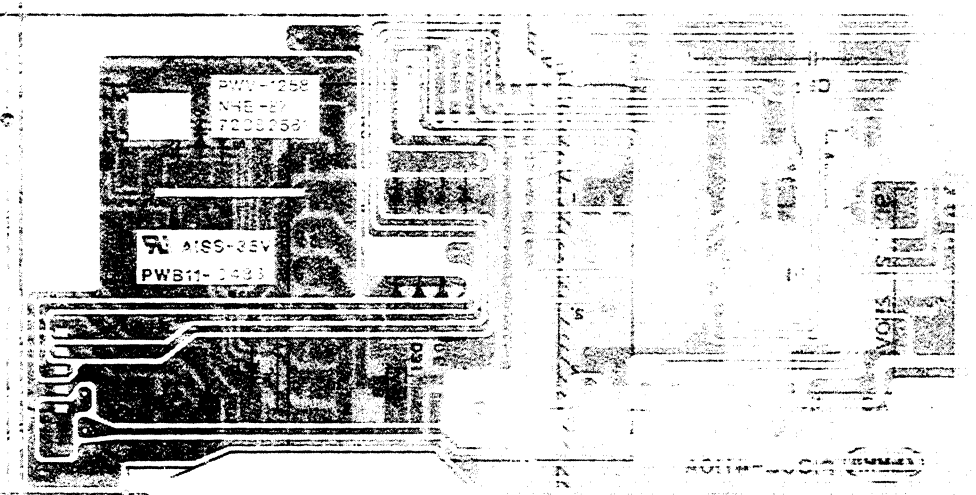
4-23. POWER/REGULATOR CIRCUIT BOARD



4-24. JACK TERMINAL SCHEMATIC DIAGRAM

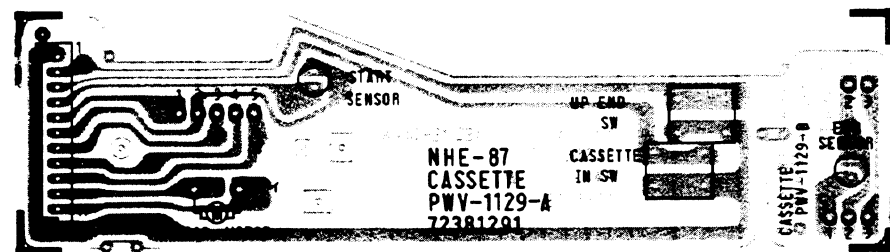


4-25. JACK TERMINAL CIRCUIT BOARD

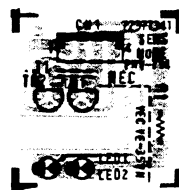


4-26. OTHER MINI-CIRCUIT BOARD

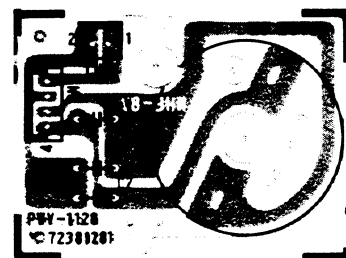
• CASSETTE CIRCUIT BOARD



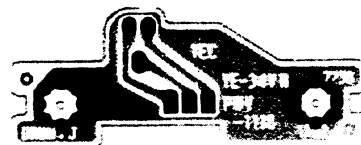
• MODE SENSOR CIRCUIT BOARD



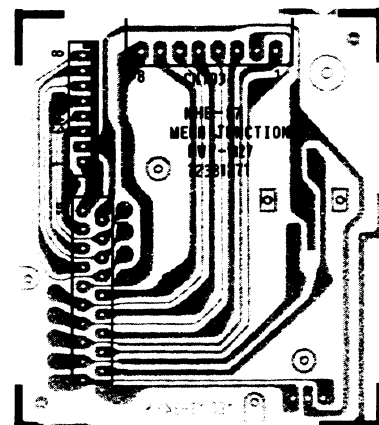
• MC CONTROL CIRCUIT BOARD



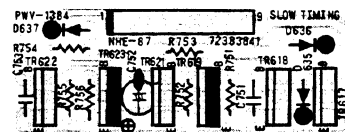
• DRUM JUNCTION CIRCUIT BOARD



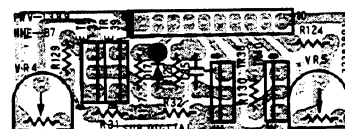
• MECHA JUNCTION CIRCUIT BOARD



• SLOW TIMING CIRCUIT BOARD



• SUB DIGITAL CIRCUIT BOARD

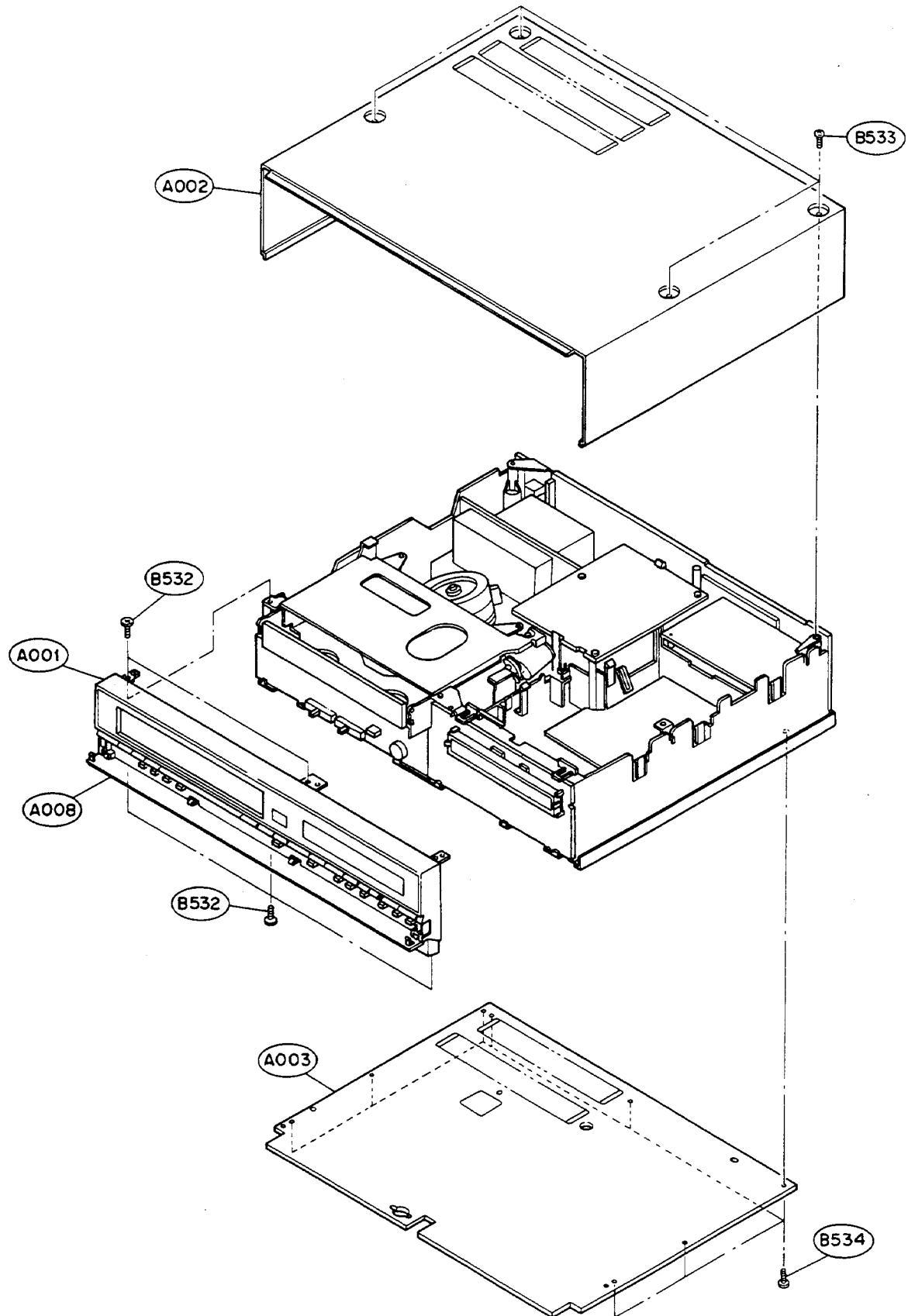


DIGITAL TRANSISTOR INFORMATION

SYMBOL	FIGURE
BA1L4M	
BN1L4M	
BA1F4M	
BN1F4M	
BN1A4M AN1A4M	
BA1A4M AA1A4M	
UN4122	
BB1A3Z	

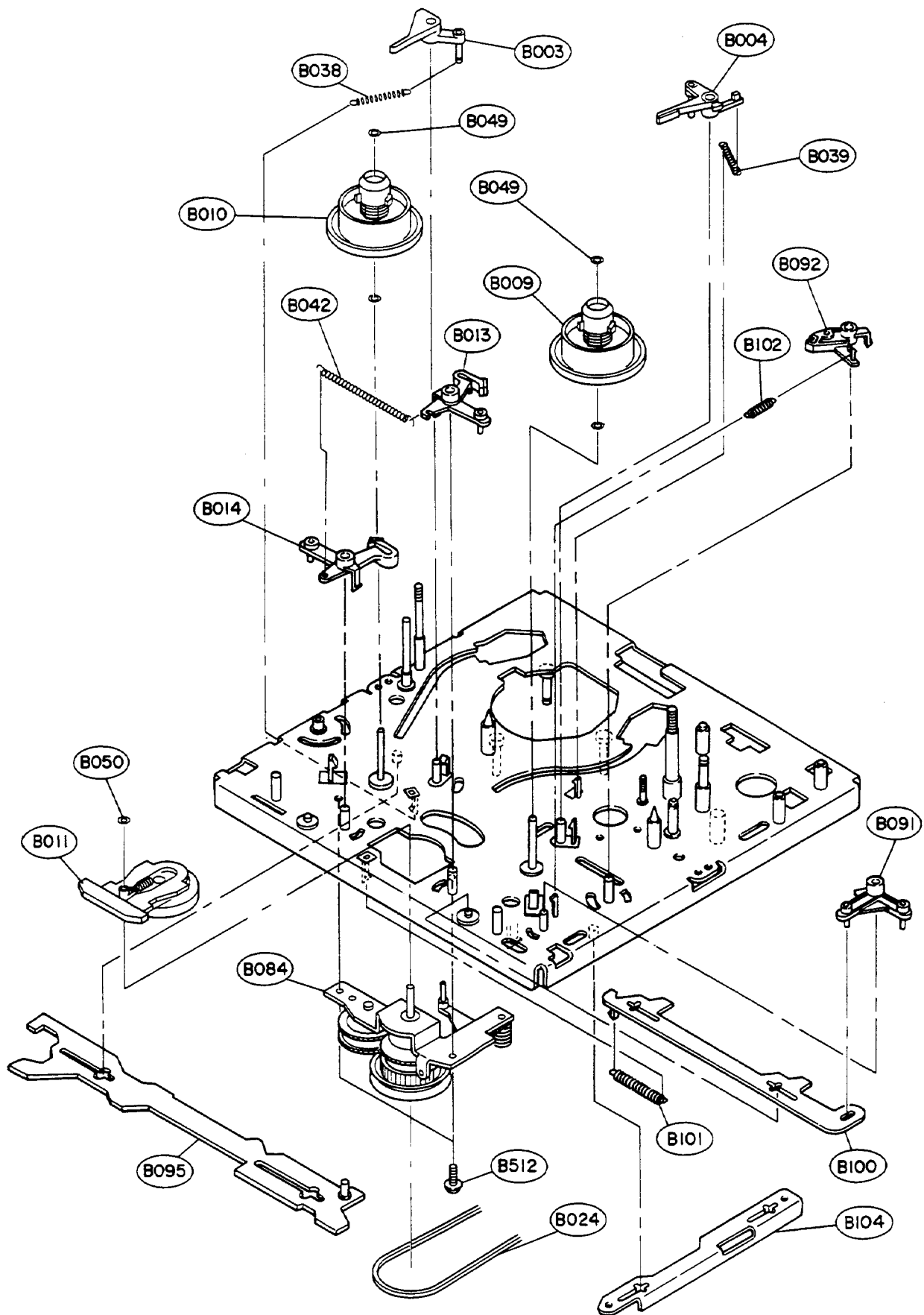
SECTION 5 EXPLODED VIEW

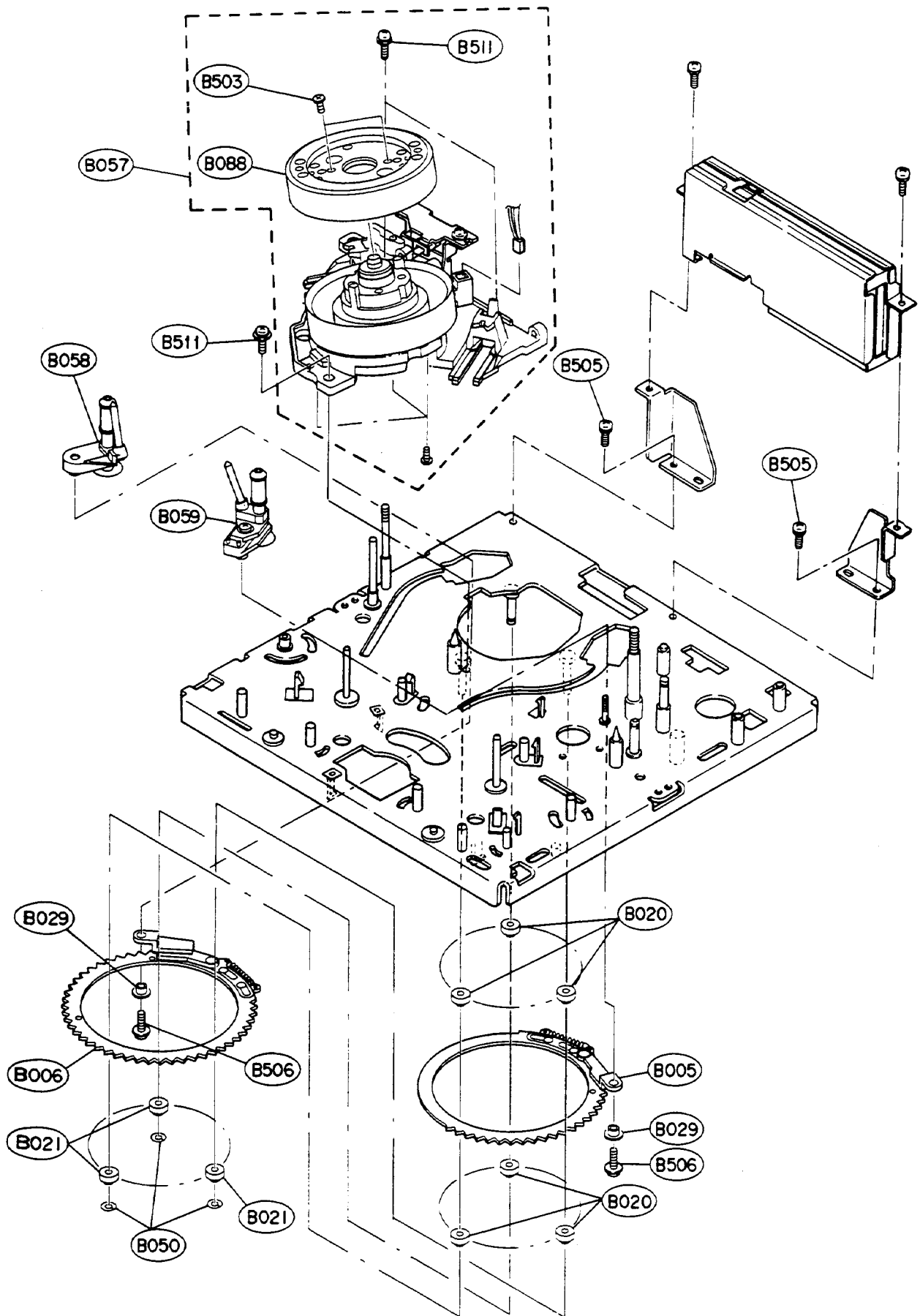
5-1. CABINET SECTION



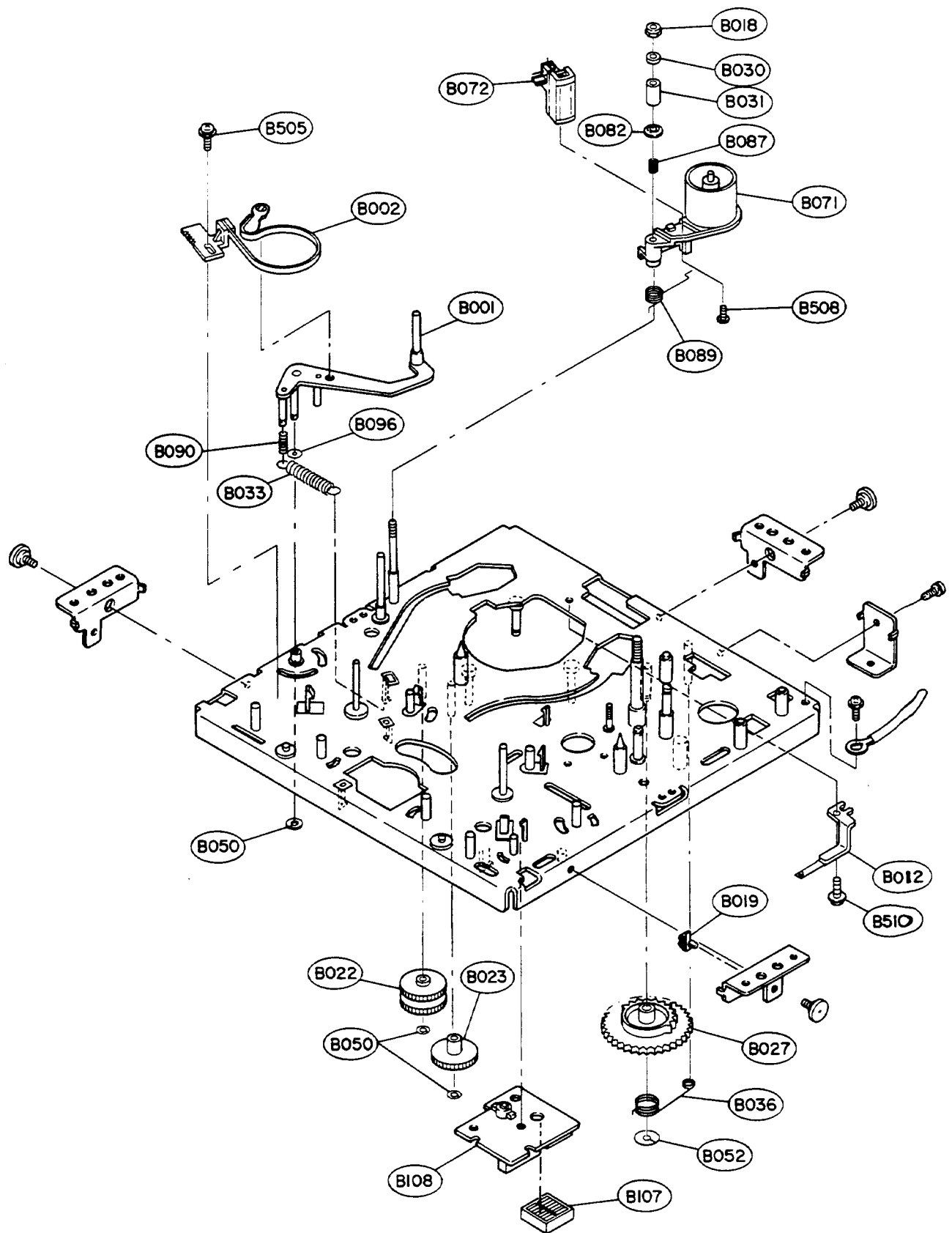
12

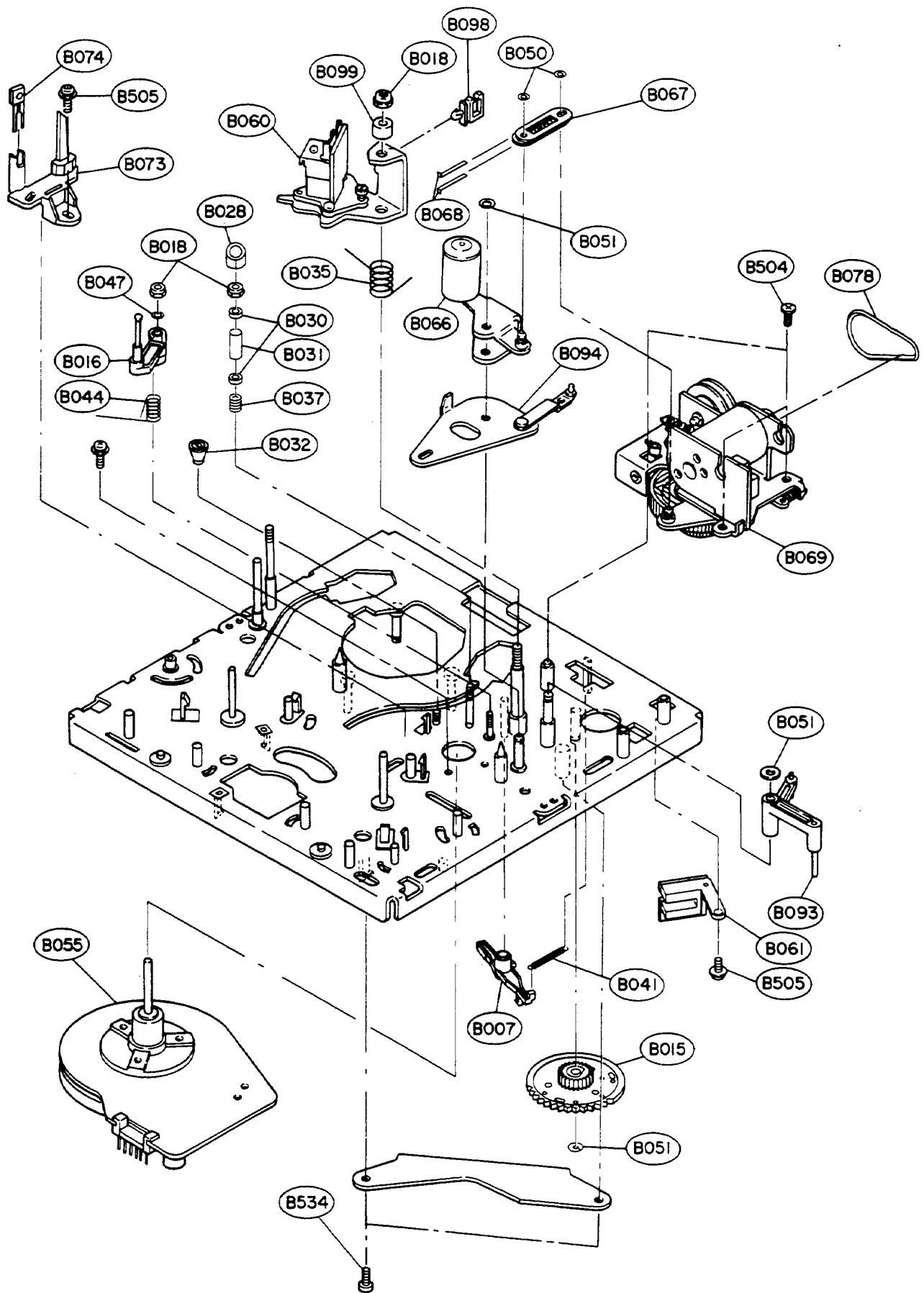
5-3. MECHANISM (I) SECTION



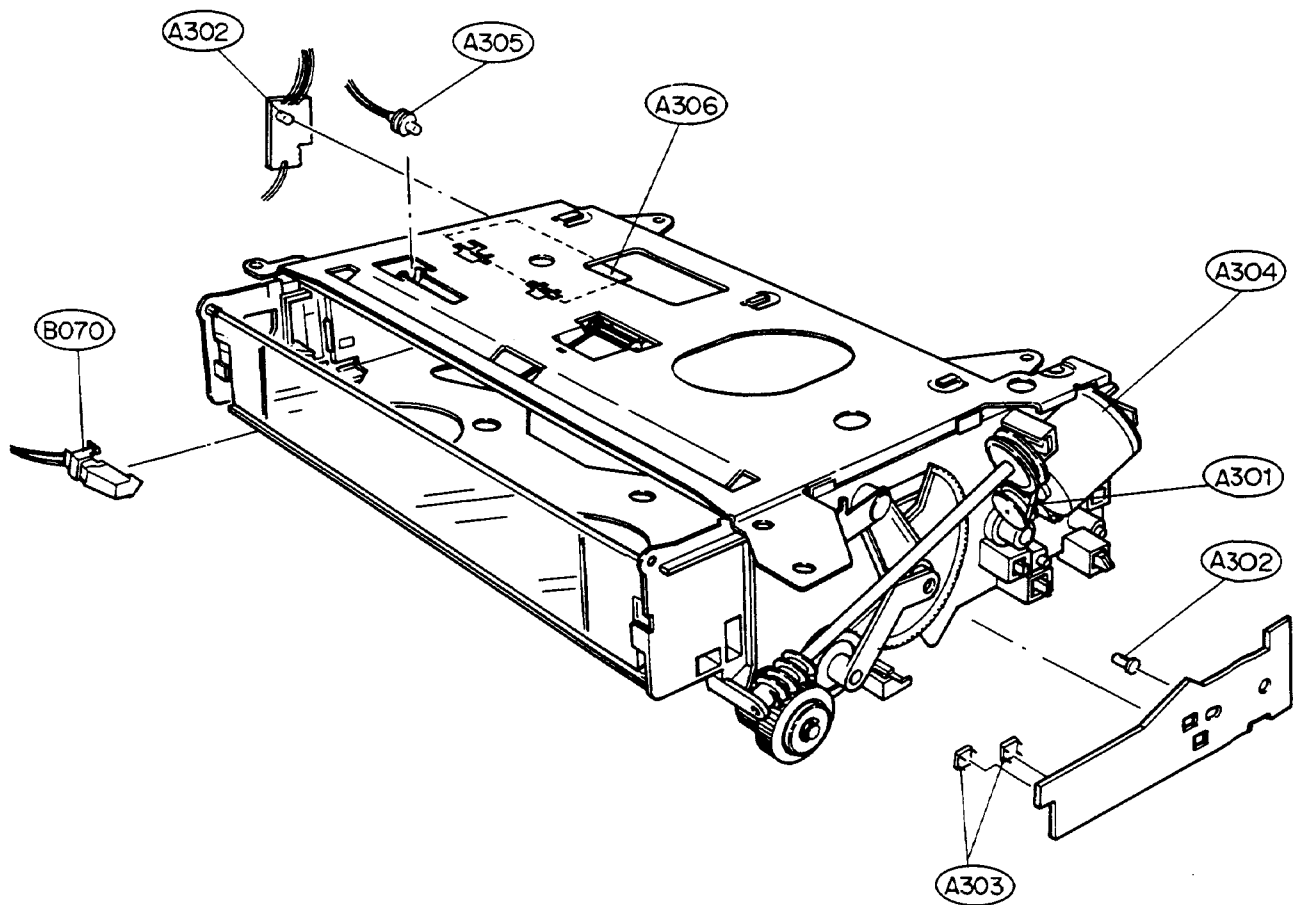


5-4. MECHANISM (II) SECTION

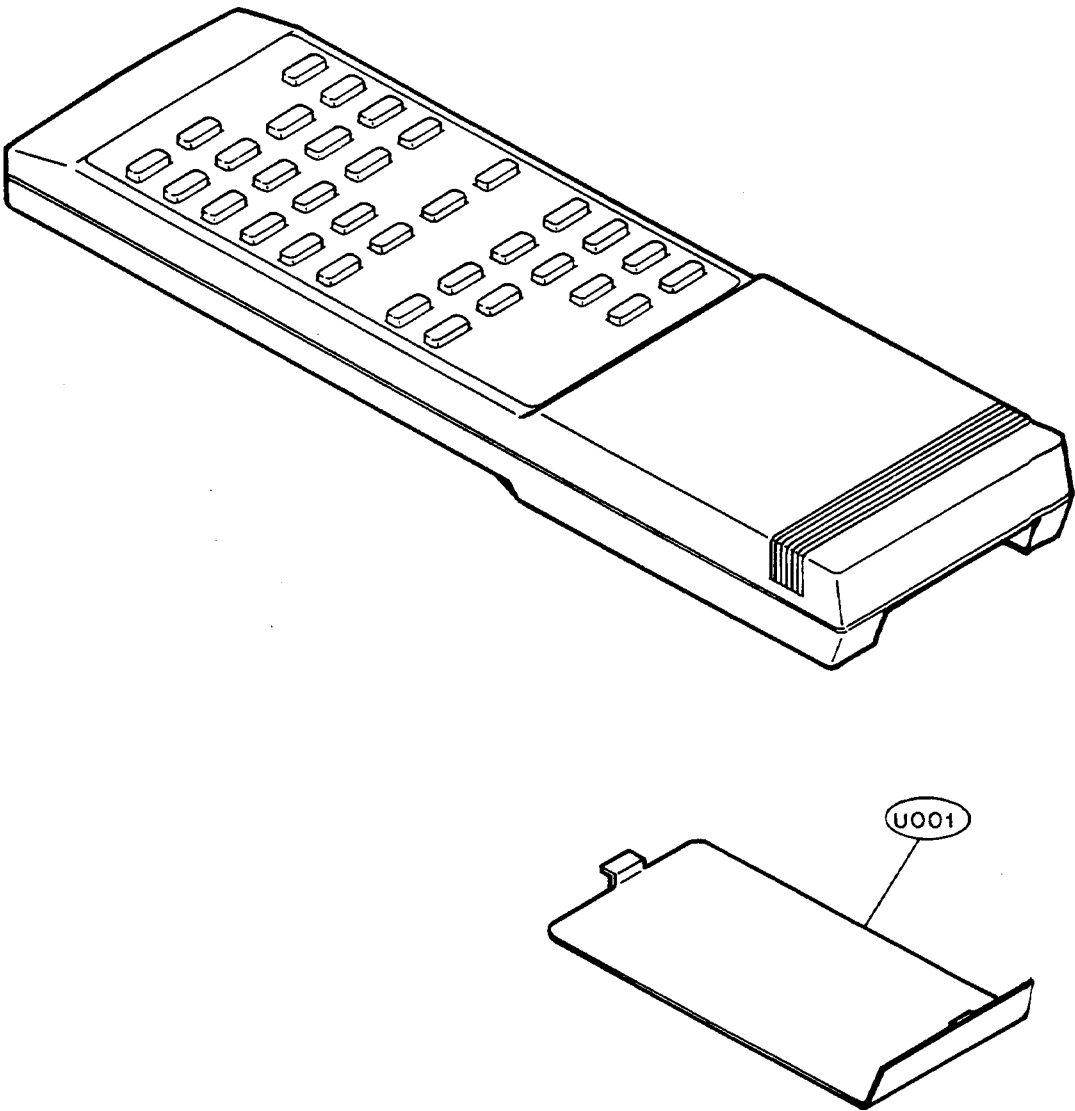




5-5. CASSETTE HOUSING SECTION



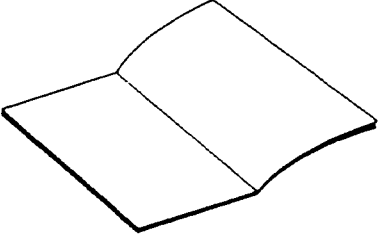
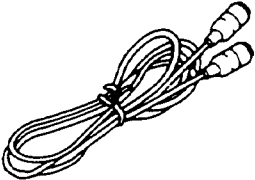
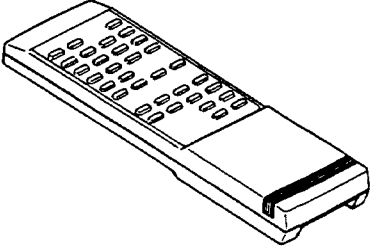
5-6. WIRELESS REMOTE CONTROL SECTION



WIRELESS REMOTE CONTROL PARTS LIST

SYMBOL	PART NO.	DESCRIPTION	Q'TY
U001	18940256	BATTERY CASE	1

5-7. ACCESSORIES

K003 	K007 	K008 

REF. NO	PART NO.	DESCRIPTION
K003	78816751	INSTRUCTION MANUAL
K007	79559054	IEC RF CABLE (1.2M)
K008	79799463	WIRESS REMOTE CONTROL UNIT

SECTION 6

REPLACEMENT PARTS LIST

(87. 07. 07)

ASSEMBLY	PAGE
SYS/SER/VID PWB ASSEMBLY	6-2
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TIMER/FUNCTION PWB ASSEMBLY	6-6
SUB FUNCTION PWB ASSEMBLY	6-7
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PRE AMP PWB ASSEMBLY	6-9
ON SCREEN PWB ASSEMBLY	6-10
DIGITAL PWB ASSEMBLY	6-11
VPS DECODER PWB ASSEMBLY	6-13
CHASSIS PWB ASSEMBLY	6-14
MECHANICAL PWB ASSEMBLY	6-14
SET PWB ASSEMBLY	6-16
PACKING PWB ASSEMBLY	6-16
POWER REGULATOR PWB ASSEMBLY	6-16
JACK TERMINAL PWB ASSEMBLY	6-17
CASSETTE HOUSING ASSEMBLY	6-17

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** ICS ***			
IC1604	37101117	IC UPC324C	1
IC1612	37101127	IC UPC-393C	1
IC1207	37101159	LA7016 ANALOG SW	1
IC1402	37101240	HA7025L (SECAM DET)	1
IC1206	37101268	IC HA17805	1
IC1201	37101312	IC AN3215K (REC Y-PROCESS	1
IC1202	37101313	IC AN3321K (PH Y PROCESS)	1
IC1603	37101323	IC BA15218 (OP AMP)	1
IC1208	37101326	IC LA7308	1
IC1401	37101334	IC PAL CHROMA(6163-6367)	1
IC1403	37151254	IC TK15061Z	1
IC1103	37151267	KOS MN1280R VOLTAGE DET	1
IC1401	37151329	MOS HU2718S	1
IC1102	37151334	IC BA6246	1
IC1101	37151380	KOS UPD75108CW-067 0700S3	1
IC1602	37901150	IC M5218 P (DIP)	1
IC1605	37903121	KOS UPD4066BC(ESD)	2
IC1613	37904002	KOS-UPD4011	1
*** TRANSISTORS ***			
TR1611	35065416	TP-2SD882 P	1
TR1203	35501931	TR 2SC2785(E,F,H,J)AT	16
TR1235	TP1211		
TR1255	TP1246		
TR1407	TP1404		
TR1411	TP1409		
TR1610	TP1601		
TR1105	TP1207		
TR1212	TP1221		
TR1243	TP1245		
TR1252	TP1254		
TP1415	TP1419		
TP1108	TP1603		
TP1607	TP1609		
TP1614	TP1615		
TR1240	TP1241		
TP1616	TP1403		
TR1101	TP1242		
TP1208	TP1213		
TP1253	TP1418		
TR1619	TP1623		
TR1617	TP1618		
TR1602	TP1621		
TR1102	35542518	TR 2SD1227M R	1

SYMBOL	PARTS NO	DESCRIPTION	QTY	
*** DIODES ***				
D1601	D1602	D1603	360KA009 DIODE 1S2473 AT26	7
D1101	D1102	D1103	360KA025 DIODE,1SS133	26
D1217	D1223	D1224		
D1401	D1402	D1605		
D1606	D1607	D1608		
D1610	D1611	D1612		
D1616	D1618	D1619		
D1620	D1621	D1630		
D1631	D1632	D1635		
D1636	D1637			
D1106	D1107	D1108	360KC972 DIODE MA165 AT26	4
D1109				
D1202	D1633	D1634	360O1025 DIODE 1SS133	3
ZD1602		369KE167	ZENER DIODE RD6-2EB2,AT26	1
ZD1603		369KE195	ZENER DIODE RD16EB2,AT26	1
*** VARIABLE RESISTORS ***				
X1101	390F0023		4-19MHZ RESONATOR	1
RM1101	39906127		RPLOCK100K*4 1.8MM 1/16W	1
RM1102	39906128		RPLOCK100K*5 1.8MM 1/16W	1
VR1201	41951144		R-VARIABLE 2.2K,R	1
VR1213	41951146		R-VARIABLE 4.7K,R	1
VR1205	41951147		R-VARIABLE 6.8K,R	1
VR1402	41951148		R-VARIABLE 10K,R	1
VR1204	VR1210		41951150 R-VARIABLE 22K,R	2
VR1202	VR1203	VR1206	41951152 R-VARIABLE 47K,R	2
VR1401			41951249 R-VARIABLE 2.2KB	1
VR1401	VR1602		41951260 R-VARIABLE 100KB	2
VR1603	VR1604		41951262 R-VARIABLE 330KB	2
*** COILS & FILTERS ***				
L1601	L1404		610G1520 FILTER COIL 100UH AT (S)	1
L1205			610G1545 FILTER COIL 2200UH	2
L1409			610G1F19 FILTER COIL 0405 15UH,AT	1
L1206	L1207		610G1P20 FILTER COIL 0405 18UH,AT	2
L1203	L1219	L1401	610G1P25 FILTER COIL 0405 47UH,AT	4
L1408				
L1202	L1204	L1210	610G1P29 FILTER COIL 0405 100UH,AT	10
L1216	L1217	L1220		
L1406	L1407	L1410		
L1411				
L1211			610G1P30 FILTER COIL C405 120UH,AT	1
L1403			610G1P33 FILTER COIL 0405 220UH,AT	1

MODEL : SYS/SER/VID PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
L1402	610G1835	FILTER COIL 0405 330UH,AT	1
CF1401	61137009	CERAMIC FILTER 4.16MHZ	1
DL1401	61551046	DELAY (COMB FILTER)	1
DL1202	61551081	1HDLL(PAL,NO1-CAN)LOW-H	1
FL1201	61827038	3.2MHZ L.P.F	1
FL1402	61827066	PAL 2INIFILTER(5.06-1.4M)	1
FL1401	61827067	4.43MHZ BPF(3435)	1
T1401	61828014	LC FILTER (8KHZ TRAP)	1
	*** PWB ASSYS ***		
	R1674C01	PWR SLOW-TIMING PWM-1384	1
	R1674N01	SUB SYSCON-6 ASSY	1
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***			
X1401	64004143	X*1AL 4.43MHZ (W/O-ADJ)	1
	*** APPEARANCE PARTS ***		
	16286431	PWR HINGE	1
	16286931	BAND WHITE	2
	16288281	WIRERAP POST (STYLE PIN)	3
	16288391	PWP BRACKET(H7)	1
	16582441	HEAT SINK(2)	1
	16631101	SHEET	1
	16875531	SCREW M3*8*15BF	1
	*** RESISTORS ***		
R1344	401KE643	R-CARBON 56H 5% 1/6W	1
R1248	401KE651	R-CARBON 12CH 5% 1/6W	1
R1245	401KE653	R-CARBON 150H 5% 1/6W	1
R1114	R1115	R-CARBON 22CH 5% 1/6W	5
R1415	R1673	R-CARBON 27CH 5% 1/6W	1
R1246	401KE659	R-CARBON 30H 5% 1/6W	1
R1421	401KE661	R-CARBON 330H 5% 1/6W	1
R1249	401KE663	R-CARBON 390H 5% 1/6W	2
R1413	401KE665	R-CARBON 470H 5% 1/6W	2
R1236	401KE666	R-CARBON 510H 5% 1/6W	1
R1453	401KE667	R-CARBON 560H 5% 1/6W	1
R1136	R1225	R-CARBON 68CH 5% 1/6W	5
R1240	R1633	R-CARBON 750H 5% 1/6W	1
R1410	401KE670	R-CARBON 820H 5% 1/6W	3
R1226	R1429	R-CARBON 1.0K 5% 1/6W	20
R1122	R1130	R-CARBON 1.0K 5% 1/6W	20

MODEL : SYS/SER/VID PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R1213	R1219	R-CARBON 1.0K 5% 1/6W	20
R1310	R1414	R-CARBON 1.0K 5% 1/6W	20
R1417	R1423	R-CARBON 1.0K 5% 1/6W	20
R1426	R143P	R-CARBON 1.0K 5% 1/6W	20
R1454	R1429	R-CARBON 1.0K 5% 1/6W	20
R1718	R1753	R-CARBON 1.0K 5% 1/6W	20
R1252	R1258	R-CARBON 1.2K 5% 1/6W	5
R1412	R1419	R-CARBON 1.5K 5% 1/6W	6
R1229	R1241	R-CARBON 1.5K 5% 1/6W	6
R1259	R1313	R-CARBON 1.8K 5% 1/6W	7
R1215	R121P	R-CARBON 1.8K 5% 1/6W	7
R1283	R1404	R-CARBON 2.2K 5% 1/6W	12
R1719	R121C	R-CARBON 2.2K 5% 1/6W	12
R1207	R1314	R-CARBON 2.2K 5% 1/6W	12
R1247	R1314	R-CARBON 2.2K 5% 1/6W	12
R1425	R1441	R-CARBON 2.2K 5% 1/6W	12
R1446	R1446	R-CARBON 2.2K 5% 1/6W	12
R1403	R1424	R-CARBON 2.7K 5% 1/6W	2
R1106	R110P	R-CARBON 3.3K 5% 1/6W	14
R111C	R1111	R-CARBON 3.3K 5% 1/6W	14
R1113	R1112	R-CARBON 3.3K 5% 1/6W	14
R1128	R1120	R-CARBON 3.3K 5% 1/6W	14
R161C	R1649	R-CARBON 4.7K 5% 1/6W	9
R128C	R1317	R-CARBON 4.7K 5% 1/6W	9
R143C	R1623	R-CARBON 4.7K 5% 1/6W	9
R1683	R1752	R-CARBON 5.6K 5% 1/6W	8
R125C	R1767	R-CARBON 5.6K 5% 1/6W	8
R1432	R1433	R-CARBON 5.6K 5% 1/6W	8
R1641	R1677	R-CARBON 6.8K 5% 1/6W	6
R14C5	R1619	R-CARBON 6.8K 5% 1/6W	6
R1657	R1660	R-CARBON 6.8K 5% 1/6W	6
R1426	R1672	R-CARBON 8.2K 5% 1/6W	4
R1726	R1721	R-CARBON 8.2K 5% 1/6W	4
R1123	R1124	R-CARBON 10K 5% 1/6W	14
R1201	R1216	R-CARBON 10K 5% 1/6W	14
R1256	R129P	R-CARBON 10K 5% 1/6W	14
R1312	R1315	R-CARBON 10K 5% 1/6W	14
R1362	R1448	R-CARBON 12K 5% 1/6W	7
R1401	R141C	R-CARBON 12K 5% 1/6W	7
R1221	R1407	R-CARBON 15K 5% 1/6W	7
R1636	R1640	R-CARBON 15K 5% 1/6W	7
R1644	R1631	R-CARBON 15K 5% 1/6W	7
R1676	R1672	R-CARBON 15K 5% 1/6W	7
R1715	R1715	R-CARBON 15K 5% 1/6W	7
R1237	R123P	R-CARBON 22K 5% 1/6W	7
R13C4	R1445	R-CARBON 22K 5% 1/6W	7
R1754	R1754	R-CARBON 22K 5% 1/6W	7
R1675	R1676	R-CARBON 27K 5% 1/6W	2
R13C0	R1301	R-CARBON 27K 5% 1/6W	2
P1678	R1687	R-CARBON 33K 5% 1/6W	2
R1612	R1666	R-CARBON 47K 5% 1/6W	4

MODEL : SYS/SEP/VID PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R1755	401KF713	R-CARBON 47K 5X 1/6W	4
R1104	R1668		6
R1692	401KF714	R-CARBON 51K 5X 1/6W	
R1627	R1674		2
R1604	R1607	R-CARBON 56K 5X 1/6W	2
R1603	R1605	R-CARBON 68K 5X 1/6W	2
R1105	401KF719	R-CARBON 82K 5X 1/6W	3
R1116	R1119		15
R1121	401KF721	R-CARBON 100K 5X 1/6W	
R1134	R1408		
R1409	R1422		
R162F	F1434		
R1634	F1636		
R1717	P1720		
R1658	R1667		
R1643	R1691		
R1222	401KF725	P-CARBON 150K 5X 1/6W	3
R1659			2
R1678	401KF727	R-CARBON 180K 5X 1/6W	1
R1620	401KF728	R-CARBON 200K 5X 1/6W	1
R1609	401KF729	R-CARBON 220K 5X 1/6W	1
R1641	401KF732	R-CARBON 300K 5X 1/6W	1
R1611	401KF734	R-CARBON 360K 5X 1/6W	1
R1650	401KF735	R-CARBON 390K 5X 1/6W	2
R1665	401KF737	R-CARBON 470K 5X 1/6W	1
R1730	401KF739	R-CARBON 510K 5X 1/6W	1
R1677	401KF739	R-CARBON 560K 5X 1/6W	1
R1642	401KF745	R-CARBON 1.0M 5X 1/6W	2
R1733	40105185	R-CARBON 3.3K 5X 1/6W	1
R1372	40105687	R-CARBON 3.9K 5X 1/6W	1
R1442	40105691	R-CARBON 5.6K 5X 1/6W	1
R1455	40105709	R-CARBON 33K 5X 1/6W	1
R1120	40105728	R-CARBON 200K 5X 1/6W	1
R1103	40351109	R-METAL 2.2H 5X 1W	1
R1602	40809801	R-FUSE 1.0H 5X 1/2W	1
R1437	409HH641	R-CARBON 47H 5X 1/4W	1
R1366	409HH649	R-CARBON 100H 5X 1/4W	1
R1295	409HH657	R-CARBON 220H 5X 1/4W	1
R1101	409HH665	R-CARBON 470H 5X 1/4W	1
R1614	409HH670	R-CARBON 75CH 5X 1/4W	1
R1622	409HH671	R-CARBON 820H 5X 1/4W	1
R1363	409HH673	R-CARBON 1.0K 5X 1/4W	1
R1220	409HH675	R-CARBON 1.2K 5X 1/4W	1
R1316	409HH681	R-CARBON 2.2K 5X 1/4W	1
R1615	409HH685	R-CARBON 3.3K 5X 1/4W	1
R1618	409HH689	R-CARBON 4.7K 5X 1/4W	1
R1406	409HH693	R-CARBON 6.8K 5X 1/4W	1
R1681	409HH697	R-CARBON 10K 5X 1/4W	2
R1613	409HH699	R-CARBON 12K 5X 1/4W	1
R1431	409HH705	R-CARBON 22K 5X 1/4W	1
R1357	409HH717	R-CARBON 68K 5X 1/4W	1
R1125	409HH721	R-CARBON 100K 5X 1/4W	1

MODEL : SYS/SEP/VID PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R1638	409HH725	R-CARBON 150K 5X 1/4W	1
R1642	409HH734	R-CARBON 360K 5X 1/4W	1
R1630	409HH751	R-CARBON 1.2M 5X 1/4W	1
R1608	409HH761	R-CARBON 4.7M 5X 1/4W	2
R1102	40912161	R-CARBON 330H 5X 1/2W	1
R1669	409P2649	R-CARBON 100H 5X 1/4W	1
	*** CAPACITORS ***		
C1103	421A0933	C-CERAMIC 50V 0.047UF	1
C1253	421CR015	C-CERAMIC 50V 12 PF	1
C1291	C1421	C-CERAMIC 50V 15 PF	2
C1266	C1268	C-CERAMIC 50V 18 PF	2
C1210	C1254	C-CERAMIC 50V 39 PF	2
C1402	421CR031	C-CERAMIC 50V 56 PF	1
C1206	421CR035	C-CERAMIC 50V 82 PF	2
C1212	421CR037	C-CERAMIC 50V 100PF	2
C1227	C1231	C-CERAMIC 50V 120PF	2
C1242	421CR039	C-CERAMIC 50V 150PF	1
C1628	421CR041	C-CERAMIC 50V 220PF	1
C1608	421CR042	C-CERAMIC 50V 270PF	1
C1413	421CR044	C-CERAMIC 50V 390PF	1
C1229	C1617	C-CERAMIC 50V 470PF	2
C1205	C1245	C-CERAMIC 50V 680PF	2
C1407	C1613	C-CERAMIC 50V 1000PF	3
C1406	C1615	C-CERAMIC 50V 4.7 PF	1
C1108	421CR237	C-CERAMIC 50V 100PF	1
C1411	421CR239	C-CERAMIC 50V 150PF	1
C1410	421CR240	C-CERAMIC 50V 180PF	1
C1419	421CR241	C-CERAMIC 50V 220PF	1
C1420	421CR245	C-CERAMIC 50V 470PF	1
C1631	421CR453	C-CERAMIC 16V 2200PF	1
C1648	421CR455	C-CERAMIC 16V 3300PF	1
C1101	C1102	C-CERAMIC 16V 0.01UF	28
C1105	C1209		
C1221	C1222		
C1244	C1246		
C1251	C1252		
C1254	C1257		
C1401	C1409		
C1416	C1423		
C1427	C1429		
C1444	C1443		
C1208	C1240	C-CERAMIC 25V 0.022UF	10
C1298	C1294		
C1424	C1435		
C1445			
C1446	421CR205	C-CERAMIC 50V 220PF	1

MODEL : SYS/SFR/VID PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
C1107	421C0217	C-CERAMIC 50V 2200PF	1
C1309	42132461	C-CERAMIC 16V 0.01UF	1
C1654	42132983	C-CERAMIC 25V 0.022UF	1
C1405	429C0333	C-CERAMIC 25V 0.047UF	2
C1245	429C0337	C-CERAMIC 25V 0.1UF	1
C1235	429G6547	C092V1H561J,AT	1
C1603	429G6912	C-FILM 50V 0.082UF	2
C1290	429G6913	C-FILM 50V 0.1UF	2
C1632	429G6915	C-METAL FILM 50V 0.15UF	1
C1753	429G6916	C-METAL FILM 50V 0.18UF	1
C1751	429G6917	C-METAL FILM 50V 0.22UF	1
C1625	429G6919	C-METAL FILM 50V 0.33UF	1
C1650	429G8261	C-METAL FILM 50V 6800PF	1
C1619	429G8263	C-METAL FILM 50V 0.01UF	1
C1622	429G8269	C-METAL FILM 50V 0.033UF	3
C1243	42976731	C-FILM 50V 0.33 UF 5X	1
C1623	42976813	C-METAL FILM 50V 0.1UF	1
C1651	42978161	C-METAL FILM 50V 6800PF	1
C1621	42978168	C-METAL FILM 50V 0.027UF	1
C1224	430A8101	C-ELEC 6.3V 22UF	2
C1233	430A8103	C-ELEC 6.3V 47UF	15
C1298	C1297		
C1403	C1304		
C1439	C1434		
C1440	C1406		
C1642	C1647		
C1105	C1207		
C1441	C1605		
C1610	C1611		
C1624			
C1276			
C1289			
C1432			
C1635			
C1436			
C1286			
C1104			
C1273			
C1601			
C1226			
C1404			
C1216			
C1604			
C1751			
C1113			
C1620			
C1753			
C1220			
C1634			
C1602			
430A8104		C-ELEC 6.3V 100UF	P
430A8105		C-ELEC 10V 22UF	1
430A8107		C-ELEC 10V 47UF	1
430A8109		C-ELEC 16V 100UF	8
430A8111		C-ELEC 16V 33UF	1
430A8112		C-ELEC 16V 47UF	1
430A8113		C-ELEC 16V 100UF	1
430A8114		C-ELEC 25V 4.7UF	1
430A8118		C-ELEC 25V 47UF	2
430A8119		C-ELEC 35V 3.3UF	1
430A8125		C-ELEC 50V 0.22UF	1
430A8128		C-ELEC 50V 1UF	7
430A8129		C-ELEC 50V 2.2UF	3
430A8144		C-ELEC 6.3V 220UF,AT	1
430A8128		C-ELEC 50V 1UF	1
430A8104		C-ELEC 50V 3.3UF-58SRA,AT	1
430A8021		C-ELEC 50V 1UF	1
430A8304		C-ELEC 6.3V 470UF	2

MODEL : NPMAL AUDIO PWB ASS

SYMBOL	PARTS NO	DESCRIPTION	QTY
I4001	*** ICS *** 37101311	IC LA709R (AUDIO)	1
TR4001	*** TRANSISTORS *** 75055712	TR 2SC2001 I	1
VR4002	*** VARIABLE RESISTORS *** 41951245	P-VARIABLE 2-2KP	1
VR4001	41951254	R-VARIABLE 10KB	1
L4001	*** COILS & FILTERS *** 410F2100	FILTER COIL 822J,AT	2
L4002	410G1537	FILTER COIL 4700H AT(S)	1
L4001	41911215	OSC COIL	1
A107	*** APPEARANCE PARTS *** 16445402	SLIDE HINGE	2
R4022	*** RESISTORS *** 401K1625	R-CARBON 10H 5X 1/6W	1
R4021	401K1631	R-CARBON 12H 5X 1/6W	1
R4016	401K1642	P-CARBON 56H 5X 1/6W	1
R4005	401K1647	R-CARBON 560H 5X 1/6W	1
R4007	401K1677	P-CARBON 1.0K 5X 1/6W	2
R4012	401K1675	R-CARBON 1.2K 5X 1/6W	1
R4014	401K1681	R-CARBON 2.2K 5X 1/6W	1
R4002	401K1687	R-CARBON 3.9K 5X 1/6W	1
R4015	401K1689	R-CARBON 4.7K 5X 1/6W	1
R4013	401K1696	R-CARBON 9.1K 5X 1/6W	1
R4003	R4020	R-CARBON 22K 5X 1/6W	3
R4004	401K1717	R-CARBON 47K 5X 1/6W	1
R4004	401K1741	R-CARBON 680K 5X 1/6W	1
R4011	401D5774	R-CARBON 1.1K 5X 1/6W	1
R4008	401D5715	R-CARBON 50K 5X 1/6W	1
R4023	409R2101	P-CARBON 1.0H 5X 1/4W	1
R4010	409R2246	R-CARBON 1.5M 5X 1/4W	1

MODEL : NORMAL AUDIO PW- ASS

SYMBOL	PARTS NO	DESCRIPTION	QTY
	*** CAPACITORS ***		
C4026	421CUC49	C-CERAMIC 50V 1000PF	1
C4027	42331C52	C-CERAMIC 50V 200PF	1
C4024	42968251	C-METAL FILM 50V 1000PF	1
C4023	42968253	C-METAL FILM 50V 1500PF	1
C4005	42968250	C-METAL FILM 50V 4700PF	2
C4008	42968264	C-METAL FILM 50V 0.012UF	2
C4015	42968268	C-METAL FILM 50V 0.027UF	1
C4001	42968471	C-FILM 50V 680PF 5%	1
C4025	42974161	C-FILM 100V 0.033UF 5%	1
C4013	430AR109	C-ELEC 16V 10UF	1
C4011	430AR110	C-ELEC 16V 22UF	2
C4007	430AR112	C-ELEC 16V 47UF	1
C4019	439A1583	C-ELEC 10UF 16V	1
C4018	439A1602	C-ELEC 1UF 50V	1
C4004			

MODEL : TIMER/FUNCTION PWE A

SYMBOL	PARTS NO	DESCRIPTION	QTY
	*** ICs ***		
IC2CC3	37101286	IC M5278L56	1
IC2001	37151363	MOS UPD75216ACW-021 N9055	1
	*** TRANSISTORS ***		
TR2C11	355D1931	TR 2SC2785(E,F,H,J)AT	1
TR2C02	355D2716	TR BA1F4M	3
TR2C01	355K2120	DIGITAL TRANSISTOR	1
TR2C05	35542716	BA1F4M (C-22K)	1
	*** DIODES ***		
D20C5	D2011	360KA009 DIODE 1S2473 AT26	3
D2001	D2003	360KA025 DIODE 1SS133	17
D2004	D2007	D2008	
D2009	D2010	D2012	
D2013	D2014	D2015	
D2016	D2017	D2022	
D2028	D2031		
D2031		360KC972 DIODE MA165 AT26	1
D2047		360U1025 DIODE 1SS133	1
ZD2C01	369KE180	ZENER DIODE RD9-1EB3,AT26	1
LD2C02	LD2003	369D4263 LED RED SLR-34VC3	2
	*** VARIABLE RESISTORS ***		
X2001	39080023	4.19MHZ RESONATOR	1
	*** RELAYS & SWITCHES ***		
SW2C01	SW2002	SW2C04	19
SW2C06	SW2007	SW2C08	
SW2C09	SW2010	SW2C12	
SW2C14	SW2015	SW2C16	
SW2C17	SW2018	SW2C20	
SW2C21	SW2022	SW2C26	
SW2C37			
	*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
X2002	64004151	X-TAL 32.768KHZ	1
FD2C01	67930062	FIP9TH7 (VPS)	1

MODEL : TIMER/FUNCTION PWB A

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** APPEARANCE PARTS ***			
R2037	R2038	16288281 WIRERAF POST (STYLE PIN)	1
R2040	R2041	16445962 HOLDER	1
R2043	R2042	16448712 LED HOLDER (3KEY)	1
*** RESISTORS ***			
R2025	R2039	401KE657 R-CARBON 220H 5X 1/6W	7
R2001	R2026	401KE661 R-CARBON 330H 5X 1/6W	2
R2013	R2025	401KE665 R-CARBON 470H 5X 1/6W	1
R2004	R2010	401KE673 R-CARBON 1.0K 5X 1/6W	1
R2011	R2012	401KE697 R-CARBON 10K 5X 1/6W	8
R2029	R2027		
R2005	R2030	401KE717 R-CARBON 68K 5X 1/6W	1
R2014	R2030	401KE721 R-CARBON 100K 5X 1/6W	4
R2034	R2033	401KE729 R-CARBON 220K 5X 1/6W	2
R2002	R2033	401KE733 R-CARBON 330K 5X 1/6W	1
R2003	R2033	401KE741 R-CARBON 680K 5X 1/6W	1
R2049	R2033	40105649 R-CARBON 100H 5X 1/6W	1
R2006	R2033	409HB685 R-CARBON 3.3K 5X 1/4W	1
R2015	R2033	409HB697 R-CARBON 10K 5X 1/4W	1
R2008	R2033	409HB721 R-CARBON 100K 5X 1/4W	1
*** CAPACITORS ***			
C2016	C2025	421CB037 C-CERAMIC 50V 100PF	7
C2026	C2028		
C2029	C2009	421CB049 C-CERAMIC 50V 1000PF	1
C2011	C2009	421CB237 C-CERAMIC 50V 100PF	4
C2010	C2009		
C2003	C2023	421CB461 C-CERAMIC 16V 0.01UF	2
C2006	C2015	421CB863 C-CERAMIC 25V 0.022UF	3
C2012	C2013	423A2C37 C-CERAMIC 50V 47PF	2
C2001	C2005	430A8109 C-ELEC 16V 10UF	3
C2002	C2005	430A8124 C-ELEC 50V 0.1UF	1
C2021	C2021	430A8131 C-ELEC 50V 4.7UF	1
C2004	C2004	430A8351 C-ELEC 50V 3.3UF	1

MODEL : SUB FUNCTION PWE ASS

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** DIODES ***			
D203C	D2032	360KAC25 DIODE-1SS133	6
D2034	D2036		
D2045	D2045	360KC972 DIODE MA165 AT26	1
LD2C01	36904262	LED GRN SLR-34MC3	1
*** VARIABLE RESISTORS ***			
VR2C01	41504194	VR RK931 50CKB (L=20)	1
VR2C02	41504202	VR 20KB RK931 (L=20)	1
*** RELAYS & SWITCHES ***			
SW2C38	SW2039	65180052 SLIDE SW 1-1-2	4
SW2042			
SW2040	65180060	SW SLIDE	1
SW2C11	SW2013	65330052 TACT SWITCH	6
SW2C23	SW2028		
*** APPEARANCE PARTS ***			
R2036	16447151	LED HOLDER B	1
*** RESISTORS ***			
	401KE661	R-CARBON 330H 5X 1/6W	1
*** CAPACITORS ***			
C2020	43920001	C-ELEC DOUBLE LAYER	1

MODEL : TUNER/IF PHR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
***	CRT & TUNER	***	
	34303021	U/V TUNER(CATV)	1
***	ICS	***	
	37101127	IC UPC-393C	1
	37101240	IC LA7530	1
	37101284	IC LA721C	1
	37151324	MOS M5865SP (EARM)	1
	37903162	IC LA791C (XU260C)	1
***	TRANSISTORS	***	
	35004113	TR-2SA916 M	1
	35055312	TR-2SC2601 L	1
	35058012	TR-2SC2352 L	1
	35501531	TR-2SC2785(E,F,H,J,JAT	3
	35501131	TR-2SA1175 (E,F,H,J)	4
	35940502	TR-2SC1730 L	1
***	DIODES	***	
	36004000	DIODE 1SS133	6
	36003040	ZENER DIODE UPC-574J	1
***	VARIABLE RESISTORS	***	
	36080012	CERAMIC RESC. CSP500E5	1
	41051140	R-VARIABLE 10K.P.	1
***	COILS & FILTERS	***	
	41002765	COIL FILTER	1
	41002770	COIL FILTER	1
	41011531	SAW COIL 1RP	1
	41011535	SAW COIL 2R7.	1
	41107034	CERAMIC DISCRIMINATOR	1
	41105012	SIF FILTER 5.5MHZ	1
	41137037	CERAMIC TRAP TPS5-SMW	1
	41170023	VIF SAWF SAF38.9M2R722	1
	41181515	V-IFT (9.5TURN)	2
	41181515	V-IFT (9.5TURN)	2

MODEL : TUNER/IF PHR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
***	ELECTRICAL PARTS & MISCELLANEOUS PARTS	***	
	70700009	CAPLFC CONNECTOR (110MM)	1
***	APPEARANCE PARTS	***	
	165P2402	TUNER SHIELD CASE	1
***	RESISTORS	***	
	401KF625	R-CARBON 10K 5% 1/6W	1
	401KF641	R-CARBON 47K 5% 1/6W	1
	401KF645	R-CARBON 68K 5% 1/6W	1
	401KF640	R-CARBON 100K 5% 1/6W	1
	401KF653	R-CARBON 150K 5% 1/6W	1
	401KF657	R-CARBON 220K 5% 1/6W	1
	401KF659	R-CARBON 270K 5% 1/6W	1
	401KF661	R-CARBON 330K 5% 1/6W	1
	401KF662	R-CARBON 390K 5% 1/6W	1
	401KF665	R-CARBON 47K 5% 1/6W	2
	401KF669	R-CARBON 680K 5% 1/6W	2
	401KF673	R-CARBON 1.0K 5% 1/6W	7
	R3011	R3145	
	R3020		
	R301P	R303P	
	R3007	R3015	
	R3019	R3127	
	R3143		
	R3142		
	R3010	R3102	
	R3103	R3120	
	R3122		
	R311C		
	R3174		
	R3002	R3022	
	R3125	R3126	
	R3005		
	R3021		
	R3111	P3112	
	R3073		
	R3141		
	R3114	P3111	
	P3146		
	P3113	R3176	
	P3008		
	P3013	P310P	
	P3145	P3150	
	P3147		
	P3004	P3105	
	P3107	P3123	

MODEL : FRE AMP. PAR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R3144	401KE733	R,CARBON 330K 5% 1/4W	1
R3104	401KE737	R,CARBON 470K 5% 1/4W	2
R3119	401KE741	R,CARBON 480K 5% 1/4W	1
R3118	401KE745	R,CARBON 1.0K 5% 1/4W	1
R3133	4080989	R,FUSE 2.2H 5% 1/4W	1
R3152	409HB641	R,CARBON 47H 5% 1/4W	1
R3137	409HB721	R,CARBON 100K 5% 1/4W	2
R3027	40913109	R,CARBON 2.2H 5% 1/4W	3
R3151	40913125	R,CARBON 10H 5% 1/4W	1
	*** CAPACITORS ***		
C3110	421CB043	C,CERAMIC 50V 330PF	1
C3109	421CB049	C,CERAMIC 50V 1000PF	3
C3007	421CB461	C,CERAMIC 16V 0.01UF	12
C3014	C3113		
C3031	C3009		
C3034	C3015		
C3061	C3032		
C3120	C3101		
	C3116		
	C3002		
C3004	4210R133	C,CERAMIC 25V 0.01UF	2
C3018	42110425	C,CERAMIC 50V 0.01UF	1
C3025	423A2C15	C,CERAMIC 50V 10PF	1
C3011	423A2025	C,CERAMIC 50V 15PF	1
C3005	423A6C03	C,CERAMIC 50V 3PF	1
	423A6C40	C,CERAMIC 50V 62PF	2
	42968267	C,METAL FILM 50V 0.022UF	1
C3006	430A8109	C,ELEC 16V 10UF	1
C3019	430A8110	C,ELEC 16V 22UF	1
C3016	430A8112	C,ELEC 16V 47UF	4
C3115			
C3111	430A8127	C,ELEC 50V 0.47UF	2
C3003	430A8128	C,ELEC 50V 1UF	3
C3006	430A8130	C,ELEC 50V 3.3UF	1
C3106	430H6068	C,ELEC 50V 47UF	1
C3117	43018103	C,ELEC 6.3V 47UF	1
C3103	439H0049	C,ELEC 50V 0.22UF	3
	C3104		
	C3105		

SYMBOL	PARTS NO	DESCRIPTION	QTY
1C5C1	*** ICS ***	3715123P IC AN6376N (HEAD AMP)	1
TR5C1	*** TRANSISTORS ***		
TR5C1	TR5C5	35SD1931 TR 2SC2785(E,F,H,J)AT	5
TR5C6	TR5C7	35543200 TR 2SC218F	1
TR5C7	TR5C4	35562244 TR 2SD639 R,S	1
L50P	*** COILS & FILTERS ***		
L50P	L50P	610G1545 FILTER COIL 2200UH	1
L50P	L50P	610G1P1P FILTER COIL 0405 12UH,AT	1
L50P	L50P	610G1P1P FILTER COIL 0405 15UH,AT	1
L50P	L50P	610G1P21 FILTER COIL 0405 22UH,AT	1
L50S	L50S	610G1P25 FILTER COIL 0405 47UH,AT	1
L51C	L50P	610G1R24 FILTER COIL 0405 56UH,AT	1
L50Z	L50P	610G1F20 FILTER COIL 0405 100UH,AT	2
	*** APPEARANCE PARTS ***		
		165P2291 SHIELD CASE COVER A	1
		165P2301 SHIELD CASE COVER B	1
		165R2311 SHIELD CASE FRAME	1
	*** RESISTORS ***		
R50P	R510	401KF625 R,CAPCON 10P 5% 1/6W	2
R50P	R50P	401KF633 R,CAPCON 22H 5% 1/6W	1
R50P	R50P	401KF643 R,CAPCON 56H 5% 1/6W	1
R50P	R51P	401KF649 R,CAPCON 100H 5% 1/6W	1
R50S	R51P	401KF657 R,CAPCON 220H 5% 1/6W	2
R51S	R51P	401KF659 R,CAPCON 270H 5% 1/6W	1
R507	R52P	401KF661 R,CAPCON 330H 5% 1/6W	3
R503	R52P	401KF669 R,CAPCON 470H 5% 1/6W	2
R517	R51P	401KF671 R,CAPCON 820H 5% 1/6W	1
R514	R51P	401KF673 R,CAPCON 1.1K 5% 1/6W	4
R522	R52P	401KF677 R,CAPCON 1.5K 5% 1/6W	3
R513	R52P	401KF679 R,CAPCON 1.8K 5% 1/6W	1
R530	R52P	401KF695 R,CAPCON 2.3K 5% 1/6W	1
R501	R52P	401KF693 R,CAPCON 2.8K 5% 1/6W	1
R512	R52P	401KF697 R,CAPCON 10K 5% 1/6W	3

MODEL : FIF AMP PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** CAPACITORS ***			
C501	421CP017	C-CERAMIC 50V 15 PF	1
C516	421CP025	C-CERAMIC 50V 33 PF	1
C51P	421CP035	C-CERAMIC 50V 82 PF	1
C525	421CP046	C-CERAMIC 50V 560PF	1
C517	421CP451	C-CERAMIC 14V 1500PF	1
C506	421CP457	C-CERAMIC 14V 4700PF	1
C50P	C519	C-CERAMIC 14V 0.01UF	3
C504	C513	C-CERAMIC 25V 0.022UF	4
C524	C515	C-CERAMIC 25V 0.022UF	2
C507	C510	C-CERAMIC 50V 0.022UF	1
C502	429C0337	C-CERAMIC 25V 0.1UF	1
C505	42930337	C-CERAMIC 25V 0.1UF	1
C512	430AP107	C-ELEC 10V 47UF	2
C521	430AP109	C-ELEC 10V 10UF	1
C507	430AP112	C-ELEC 10V 47UF	1
C511	430AP125	C-ELEC 50V 0.22UF	1

MODEL : CN SCREEN PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** ICS ***			
ICAC01	37151375	MOS M5C455-C53SP (US CSD)	1
*** TRANSISTORS ***			
TP6001	TR6C06	TR 2SC2765(E,F,H,J)AT	3
TR6002	TR6C04	TR 2SA1175 (E,F,H,J)	3
*** DIODES ***			
D6001	360KA025	DIODE, 1SS133	1
*** COILS & FILTERS ***			
L6002	61UG1822	FILTER COIL C405 27UH,AT	1
L6001	61UG1820	FILTER COIL C405 100UH,AT	2
*** APPEARANCE PARTS ***			
	165R3101	SCREEN PWR PRACKET	1
	16875531	SCREW M3*8*15RF	2
*** RESISTORS ***			
R6029	401KE625	R-CARBON 10H 5% 1/6W	1
R6016	401KE645	R-CARBON 68H 5% 1/6W	1
R6017	401KE660	R-CARBON 100H 5% 1/6W	1
R6004	401KE657	R-CARBON 220H 5% 1/6W	1
R6003	401KE671	R-CARBON 820H 5% 1/6W	1
R6015	401KE673	R-CARBON 1.0K 5% 1/6W	1
R6011	401KE681	R-CARBON 2.2K 5% 1/6W	2
R6013	401KE685	R-CARBON 3.3K 5% 1/6W	1
R6010	401KE680	R-CARBON 4.7K 5% 1/6W	2
R6001	401KE693	R-CARBON 6.8K 5% 1/6W	2
R6020	401KE697	R-CARBON 10K 5% 1/6W	3
R6002	401KE701	R-CARBON 15K 5% 1/6W	2
R6014	401KE705	R-CARBON 22K 5% 1/6W	5
R6027	401KE712	R-CARBON 43K 5% 1/6W	1
R6006	401KE717	R-CARBON 47K 5% 1/6W	1
R6025	401KE715	R-CARBON 56K 5% 1/6W	1
R6008	401KE721	R-CARBON 100K 5% 1/6W	1
P6005	401KE733	R-CARBON 330K 5% 1/6W	1
R6012	401KE737	R-CARBON 470K 5% 1/6W	1

MODEL : ON SCREEN PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** CAPACITORS ***			
C6004	C6C05	421C013 C-CERAMIC 50V 10 PF	2
C6010	C6014	421C037 C-CERAMIC 50V 100PF	2
C6016	C6017	421C0454 C-CERAMIC 16V 2700PF	2
C6007	C6012	421C0263 C-CERAMIC 25V 0.022UF	2
C6003	C6012	421A104 C-CERAMIC 50V 22PF	1
C6001	C6C02	430A8103 C-ELEC 6.3V 47UF	4
C6013			
C6009	430A8105	C-ELEC 10V 22UF	1
C6011	430A8127	C-ELEC 50V 0.47UF	1
C6006	C6C15	430A812P C-ELEC 50V 10F	2

MODEL : DIGITAL PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** ICs ***			
IC5012	IC5013	37101159 LA7016 ANALOG SW	2
IC5015	37101274	IC BA236	1
IC5004	IC5005	37101318 IC MN 3106	2
IC5002	37101332	IC HA19216	1
IC5003	37101333	IC HA19508	1
IC5014	37151167	MOS HD140408	1
IC5006	IC5007	37151315 MOS UPD41464CF-12	6
IC5009	IC5010	IC5011	
IC5001	37151355	MOS UPD65031G-153-12	1
*** TRANSISTORS ***			
TR5002	TR5003	35501531 TR 2SC2785(E,F,H,J)AT	15
TR5006	TR5007	TR5010	
TR5013	TR5016	TR5018	
TR5019	TR5022	TR5025	
TR5033	TR5037	TR5039	
TR5040		35502710 TR,DTC124ES,AT	1
TR5015	TR5026	TR,BA1F4M	4
TR5036			
TR5038		35502717 TR,BA1L4M	1
TR5001	TR5009	355K1131 TR,2SA1175 (E,F,H,J)	9
TR5014	TR5017	TR5023	
TR5030	TR5031	TR5034	
TR5032		355K2110 BN1F4M (A,22K) AT	1
TR5021		355K2111 BN1L4M (A,47K) AT	1
TR5043		35541931 TR,2SC2785(E,F,H,J)	1
TR5041	TR5042	35542710 DTC 124ES	2
*** DIODES ***			
D5001	D5002	D5003	
D5004	D5005	D5008	
D5010	D5011	D5012	
D5013	D5015	D5016	
D5017	D5021	D5022	
D5024	D5025	D5026	
D5023	D5027		
ZD5001		36001025 DIODE 1SS133	2
ZD5002		36905040 ZENER,DICDE RD-5.1EB2-H	1
		36905141 ZENER DIODE RD2.0EB(A)	1
*** VARIABLE RESISTORS ***			
VR5003			
VR5001	VR5002	419S1245 R-VARIABLE 47CB	1
VR5004	VR5005	419S1254 R-VARIABLE 10KB	2
		419S1260 R-VARIABLE 100KB	2

MODEL : DIGITAL PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
***	COILS & FILTERS	***	
L5011	610G1511	FILTER COIL 3.3UH AT (S)	1
L5008	610G1522	FILTER COIL 27UH AT (S)	1
L5001	610G1623	FILTER COIL 33UH AT (S)	8
L5004	L5003		
L5006	L5007		
L5013			
L5010	610G1624	FILTER COIL 39UH AT (S)	1
L5015	61071618	COIL/FILTER 12UH(S)	1
FL5003	61827C39	4.43MHZ B-P-F	1
FL5002	61827C65	5.0MHZ L-P-F	1
FL5001	61911196	LFF ZLB-5M1845	1
***	APPEARANCE PARTS	***	
***	RESISTORS	***	
16286431	PWB HINGE		2
16448542	LOCK HANGER		1
16582911	DIGITAL PARTS SHIELD		1
16582951	DIGITAL PATARN SHIELD		1
16631251	SHEET		1
R5074	401KE653	R-CARBON 150H 5X 1/6W	1
R5012	401KE661	R-CARBON 330H 5X 1/6W	3
R5044	401KE665	R-CARBON 470H 5X 1/6W	1
R5020	401KE666	R-CARBON 510H 5X 1/6W	1
R5065	401KE667	R-CARBON 560H 5X 1/6W	1
R5062	401KE669	R-CARBON 680H 5X 1/6W	1
R5002	401KE673	R-CARBON 1.0K 5X 1/6W	15
R5026	R5014		
R5030	R5029		
R5035	R5049		
R5055	R5051		
R5063	R5056		
R5024	R5068		
R5048	R5107		
R5010	R5011		
R5022	R5128		
R5007	R5025		
R5004	R5006		
R5084	R5132		
R5094	R5092		
R5066	R5101		
R5103			
R5005	R5008		
R5019	R5043		
R5073	R5083		
401KE689			

MODEL : DIGITAL PWR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R5113	R5114		
R5116	R5117		
R5122	R5123		
R5035	R5126		
R5070			
R5015	R5054		
R5137	R5131		
R5028	R5081		
R5065	R5093		
R5096	401KE701	R-CARBON 15K 5X 1/6W	2
R5106	401KE703	R-CARBON 18K 5X 1/6W	1
	401KE713	R-CARBON 47K 5X 1/6W	2
R5050	401KE721	R-CARBON 100K 5X 1/6W	3
R5086	401KE725	R-CARBON 150K 5X 1/6W	1
R5088	401KE735	R-CARBON 390K 5X 1/6W	1
R5125	401KE741	R-CARBON 680K 5X 1/6W	1
R5109	401KE745	R-CARBON 1.0M 5X 1/6W	3
R5124	40105235	R-CARBON 390K 5X 1/6W	1
R5134	40105657	R-CARBON 220H 5X 1/6W	1
R5127	40105660	R-CARBON 300H 5X 1/6W	1
R5139	40105695	R-CARBON 8.2K 5X 1/6W	1
R5136	40105697	R-CARBON 10K 5X 1/6W	1
R5138	40105704	R-CARBON 20K 5X 1/6W	1
R5095	40105727	R-CARBON 180K 5X 1/6W	1
***	CAPACITORS	***	
C5064	421C8027	C-CERAMIC 50V 39 PF	1
C5020	421C8029	C-CERAMIC 50V 47 PF	1
C5041	421C8043	C-CERAMIC 50V 330PF	1
C5066	421C8045	C-CERAMIC 50V 470PF	1
C5072	421C8454	C-CERAMIC 16V 2700PF	1
C5017	421C8457	C-CERAMIC 16V 4700PF	1
C5004	421C8863	C-CERAMIC 25V 0.022UF	18
C5011	C5009		
C5019	C5012		
C5040	C5034		
C5050	C5036		
C5065	C5049		
C5086	C5057		
C5084	C5062		
C5082	C5081		
C5051	42132023	C-CERAMIC 50V 27 PF	1
C5054	42132043	C-CERAMIC 50V 330PF	1
C5073	42132863	C-CERAMIC 25V 0.022UF	1
C5016	42181377	C-CERAMIC 25V 0.022UF	7
C5077			
C5042			
C5076			
42966908	C FILM 50V 0.039UF		1
42966912	C FILM 50V 0.082UF		1
42966921	C-METAL FILM 50V 0.47UF		1
42968258	C-METAL FILM 50V 3900PF		1

MODEL : DIGITAL PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
C5085	42968261	C,METAL FILM 50V 6800PF	1
C5089	42968268	C,METAL FILM 50V 0.027UF	1
C5021	42968269	C,METAL FILM 50V 0.033UF	1
C5059	42910044	C,CERAMIC 50V 0.1UF	1
C5092	42978169	C,METAL FILM 50V 0.033UF	1
C5023	42978269	C,METAL FILM 50V 0.033UF	1
C5088	430A8101	C,ELEC 6.3V 22UF	1
C5007	430A8104	C,ELEC 6.3V 100UF	7
C5047	C5035		
C5080	C5078		
C5070			
C5022	C5029	C,ELEC 16V 10UF	1
C5031	C5046	C,ELEC 16V 22UF	7
C5061			
C5005	C5068	C,ELEC 16V 100UF	3
C5075	430A8128	C,ELEC 50V 1UF	1
C5028	430A8131	C,ELEC 50V 4.7UF	1
C5087	43018103	C,ELEC 6.3V 47UF	1
C5013	43018104	C,ELEC 6.3V 100UF	2
C5090	43018105	C,ELEC 10V 22UF	1
C5067	43018110	C,ELEC 16V 22UF	1
C5006	43018112	C,ELEC 16V 47UF	1
C5038	43018113	C,ELEC 16V 100UF	1
C5002	43311010	C,ELEC 16V 10UF	1

MODEL : VFS DECODED PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
ICP71	*** ICS ***		
ICP72	37101309 IC SAA5235		1
	37101310 IC SAA1135		1
D871	*** DIODES ***		
	360KA025 DIODE,1SS133		1
L871	*** COILS & FILTERS ***		
	610A7C17 COIL,FILTER 10UH		1
X871	*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***		
	6400A146 X,TAL HC-49U 10.0000MHZ		1
R872	*** RESISTORS ***		
R871	401KE697 R,CARBON 10K 5% 1/6W		2
	401KE721 R,CARBON 100K 5% 1/6W		1
CE72	*** CAPACITORS ***		
CE75	421AC224 C,CERAMIC 50V 0.022UF		1
CE81	421CC217 C,CERAMIC 50V 1000PF		1
CE73	423A1147 C,CERAMIC 50V 82PF		1
CE79	423A1148 C,CERAMIC 50V 100PF		1
CE78	423A1151 C,CERAMIC 50V 270PF		1
CE76	423A1101 C,CERAMIC 50V 470PF		1
CE74	423A2025 C,CERAMIC 50V 15PF		1
CE77	42966500 C,FILM 50V 4700PF 5%		1
CE82	42960054 C,METAL FILM 25V C,C68UF		1
CE87	42960064 C,METAL FILM 25V C,C47UF		1
CE84	421A8114 C,ELEC 25V 4.7UF		1
CE71	421A8114 C,ELEC 25V 22UF		1

MODEL : CHASSIS PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** PWB ASSYS ***			
PA04	E1674001	SYS/SEF/VLD PWB ASSY	1
PA05	E1674001	TIMER/IF PWB ASSY	1
PA06	E1674001	TIMER/FUNCTION PWB ASSY	1
PA23	E1674001	DIGITAL PWB ASSY	1
PA08	E1674001	LOGICAL ALDIO PWB ASSY	1
PA11	E1674001	SUP FUNCTION PWB ASSY	1
PA22	E1674001	VPS DECODER PWB ASSY	1
PA21	E1674001	OP SCREEN PWB ASSY	1
PA12	E1683101	PRE AMP PWB ASSY	1
PA18	79567401	POWER/REG UNIT (DC-G-Z)	1

MODEL : MECHANICAL PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** MECHANICAL PARTS ***			
B003	16177871	S. SOFT BRAKE ARM ASSY	1
B004	16177882	TU-SOFT BRAKE ARM ASSY	1
B005	16177022	LOADING UP ASSY	1
B006	16177932	LOADING LOW ASSY	1
B007	16178003	C.BRAKE ASSY	1
B010	16178062	S.PFEL DISK ASSY	1
B012	16178223	GUIDE ROLLER ASSY	1
B015	16178301	EARTH PLATE S.A.	1
B015	16178392	MOOF GEAR ASSY	1
B009	16179853	RFEI DISK ASSY (2)	1
B071	16180351	S-LOADINGPOST ASSY	1
B011	16180503	IMPEDANCE ROLLER ASSY	1
B001	16180801	R-ADLER ASSY	1
B001	16182101	TU SLANT RASE ASSEMBLY	1
B001	16183562	TENSION ARM ASSY(M2)	1
B002	16183551	TENSION HAND ASSY(M2)	1
B013	16183561	BRAKE ARM(R)ASSY(M2)	1
B014	16183571	BRAKE ARM (L)ASSY(M2)	1
B091	16183591	CONNECTED ARM ASSY	1
B092	16183591	LOCK LEVER ASSY	1
B094	16183611	S LINK ARM ASSY	1
B095	16183632	S LINK ASSY	1
B016	16183642	REVERSE ARM ASSY	1
B066	16183653	PINCH ROLLER ARM ASSY(M2)	1
B069	16183671	NCUF CAP ASSY(M2)	1
B073	16183921	LED HOLDER ASSY (M2)	1
B093	16194071	BPAKE LINK ARM ASSY (DC)	1
B084	16184371	R-DRIVE ASSY (M2)	1
B067	16184781	PINCH-LINK ASSY	1
B018	16207641	NUT	4
B019	16208001	POLY SLIDER	2
B020	16208161	CLAMPER	1
B021	16442101	GUIDE ROLLER	6
B022	16442111	GUIDE ROLLER HOLDER	3
B023	16442121	GEAR (1)	1
B023	16442131	GEAP (2)	1
B024	16442161	DRIVE FELT	1
B027	16443362	GEAR	1
B028	16444374	G-P CAP	1
B098	16448341	ACC CODE CRAMPER	1
B029	16534121	COLLAP	2
B030	16534231	FRANGE	3
B031	16534251	COLLFP	2
B032	16534262	PIK	1
B082	16534571	TAPER FLANGE	1

MODEL : MECHANICAL PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
B035	16578922	SPRING	1
B036	16578941	SPRING	1
B037	16578972	GUIDE PIN SPRING	1
B042	16579172	SPRING	1
B068	16579261	PINCH LINK SP.PLATE	2
B044	16579911	SPRING (REV.ARM)	1
B087	16580681	IMPEDANCE ROLLER SPRING(C	1
B041	16580762	C.BRAKE SPRING (3)	1
P100	16582031	BRAKE LINK(C2)	1
B101	16582041	LINK RETURN SPRING	1
B102	16582051	LOCK LEVER SPRING	1
B033	16582161	TENSION SPRING(M2)	1
B104	16582201	BRAKE LINK(C1)	1
B089	16582611	IP SPRING NO.2(T)	1
B038	16582761	S.SOFT FRAKE SPRING	1
P039	16582771	TU.SOFT PRAVE SPRING	1
B090	16582931	SPRING (T.A)	1
B047	16628731	SPACER	2
B049	16629291	SLIT WASHER	1
B051	16629412	SLIT WASHER	2
B052	16629422	SLIT WASHER	3
B050	16630591	SLIT WASHER	1
P512	16875971	SCREW/S M3X5X15BF	9
	16876781	SCREW/S M2.6X6X15BF	3
	16877731	SPECIAL SCREW	3
B504	16877841	SCREW/2.6X8X15BF	3
	16877961	SFT SCREW 2*2.7*35KF	1
B505	16878101	SPECIAL SCREW	4
B534	16886201	SPECIAL SCREW	2
	18851001	E.WASHER DIA 4	1
	19516371	WIRE CLAMPER-H	1
	70780026	FFC CABLE 1PP*4.5MM	1
B072	79501111	FF HEAD	1
B060	79501153	ACE HEAD ASSY(M2-MON02)	1
B055	79502074	CAPSTAN MOTOR HHF-3106A	1
B061	824178W1	MODE SENSOR SASSY	1
B058	82601F01	S.SLANT RASE SASSY	1
B059	82601PC1	TU.SLANT RASE SASSY	1
	82601F01	IP ROLLER SASSY	1
	82642ED1	PINCH APM SASSY(M2)	1
B108	82642PJ1	JUNCTION PWR SASSY	1
B057	82674AA1	HEAD DRUM SASSY(P/S-DEV2)	1
B506	91002331	SCREW L-CPIMS*2.6X15BF	2
B088	92515AH1	ROTARY DRUM S.A(PA/SE-2H)	1
B078	16629251	LOADING BELT	1

MODEL : MECHANICAL PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
B096	16286961	WASHER D3.1 TO.5	1
B095	16535261	ACE ADJUST PLATE	1
B511	16875541	SCREW M3*10*15BF	3
B510	16877711	PL-CPIMS*2.6X5X15RF	1
B107	73200032	CONNECTER TRG-P08X-A1	1
	91003031	SCREW/PL-CPIMS*3*6X15RF	3
B502	91012011	SCREW CPIMS*2*4X15BF	1
B508	91012361	SCREW/CPIMS*2.6X10X15RF	3
H501	91127325	SCREW CBBMS 2.6X5X3AF	1

MODEL : SET PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***			
A110	71129050	JACK TERMINAL (1000G)	1
*** APPEARANCE PARTS ***			
A101	16183724	CASSETTE HOUSING ASSY M2	1
A001	16184351	FRONT PANEL ASSY DX-1000G	1
A002	16375861	TOP COVER	1
A107	16445602	SLIDE HINGE	2
A102	16447131	FRONT COVER DX-1000U	1
A103	16573831	FRONT COVER SPRING	1
A003	16582361	BOTTOM PLATE	1
A108	16631221	FUSE COVER(3)	1
B532	16876431	SCREW,PTF4X12X15HF	12
B533	16878171	SCREW (TOP)	4
B534	188E6201	SPECIAL SCREW	9
A008	16184891	PANEL DOOR ASSY	1
	549910408	SERVICE MANUAL DX-1000G	1

MODEL : PACKING PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
*** ELECTRICAL PARTS & MISCELLANEOUS PARTS ***			
K007	79550054	IEC RF CABLE (1.2M)	1
	79709463	WIRELESS REMOTE RD-D1G	1
*** APPEARANCE PARTS ***			
K011	16830121	PACKAGE	1
K009	16832952	CUSHION(FRONT)	1
K010	16832961	CUSHION(REAR)	1
K012	16833241	CARTON BOX DX-1000G	1
*** PRINTED & PACKING MATERIALS ***			
K003	78816751	INSTRUCTION BOOK DX-1000G	1

MODEL : POWER REGULATOR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
IC001	79VA0003	IC M5237L UCZ0097ZZ	1
IC002	79VA0004	IC PQ12R02 UC80028AZ	1
IC030	79VA0033	IC M5237L UCZ0097ZZ	1
*** TRANSISTORS ***			
TR001	35520817	TR, 2S8949 Q	1
TR002	35003516	TR, 2SA733/733A P	1
TR003	35543519	TR, 2SC2390	1
TR005	79VA0005	2SD1266 UAD0090CZ	1
TR006	35170510	TR, AA1A4M	1
TR007	79VA0006	2SD1286 UAD0089AZ	1
TR008	35541931	TR, 2SC2785 (E, F, H, J)	1
TR009	35170805	TR, AA1A4M	1
TR010	35920916	TR, 2SB548	1
TR011	79VA0080	TR, AN1F4M	1
TR012	35924117	TR, 2SB941	1
*** DIODES ***			
D002	36107522	RECTIFIER, SI ERA15-02	1
D003	36107522	RECTIFIER, SI ERA15-02	1
D004	79VA0083	DIODE 11E1	1
D005	79VA0083	DIODE 11E1	1
D006	79VA0083	DIODE 11E1	1
D007	79VA0083	DIODE 11E1	1
D008	79VA0083	DIODE 11E1	1
D009	36003954	DIODE 1S2076A	1
D010	36107522	RECTIFIER, SI ERA15-02	1
D011	36003954	DIODE, 1S2076A	1
D030	36003954	DIODE, 1S2076A	1
D031	79VA0083	DIODE 11E1	1
D032	79VA0083	DIODE 11E1	1
D033	79VA0083	DIODE 11E1	1
D034	79VA0083	DIODE 11E1	1
ZD002	36905204	ZENER DIODE, RD20EB	1
ZD003	36905220	ZENER DIODE, RD30EB	1
*** TRANSFORMER ***			
PT001	79VA0081	TRANSFORMER NH1311	1
SW001	79VA0071	SW-W101W-01BB, PJC0136ZZ	1
*** SWITCH ***			
R003	79VA0008	1/4W2.2KJB(7.5) UEED2228A	1
R004	79VA0009	RS1PC510HJS UEFD511BF	1
R006	79VA0010	1/4W33KGB(7.5)	1
R007	79VA0011	1/4W33KJB(7.5)	1
R008	79VA0012	1/4W0.22HK, S	1
R009	79VA0013	1W0.47HK, S	1
R010	79VA0014	1/4W2.7KJ, B(7.5)	1
R012	79VA0015	1/4W15KJ.B(7.5) UEED1538A	1
R013	79VA0016	1/4W220BJ, B(7.5)	1

MODEL : POWER REGULATOR ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
R014	79VA0017	1/4W1.2KJ, B(7.5)	1
R015	79VA0018	1/4W10KJ, B(7.5)	1
R017	79VA0011	1/4W4.3KG, B(7.5)	1
R018	79VA0019	1/4W680HJ, B(7.5)	1
R020	79VA0020	1/4W22KJ, B(7.5)	1
R021	79VA0015	1/4W15KJ, B(7.5) UEEB153BA	1
R030	79VA0016	1/4W220BJ, B(7.5)	1
R031	79VA0082	RD1/4WPTY8.2KGB (7.5)	1
R032	79VA0019	1/4W680HJ, B(7.5)	1
R033	79VA0011	1/4W33KJ, B(7.5)	1
R034	79VA0011	1/4W33KJ, B(7.5)	1
L091	79VA0076	CHOKECOIL FKOB160MH15	1
*** CAPACITORS ***			
C002	79VA0079	CE04WIC472MA	1
C003	79VA0021	CE04W1J101MA UGAG101BU	1
C004	43026041	CE04W1E470MA	1
C005	79VA0084	CE04W1V222MA	1
C006	42976509	CO92V1H472J, A	1
C007	43026048	CE04W1E332MA	1
C008	43026028	CE04JC470MA	1
C009	43026045	CE04W1E471MA UGAJ1ROBU	1
C010	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C011	42311045	CC45SL1H101J, B	1
C012	79VA0023	CE04W2A101MA UGAJ101BU	1
C013	79VA0063	CE04W1H010MA UGAF1ROBU	1
C015	42976525	CO92V1H104J, A	1
C016	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C017	43026054	CE04W1V101MA UGAJ1ROBU	1
C021	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C022	79VA0069	CE04W2A470MA UGAJ470BU	1
C023	79VA0022	CE04W2A010MA UGAJ1ROBU	1
C091	79BA0074	0.1μF UG0326Z	1
PC001	79VA0075	POWER SUPPLY CORD 1EC	1
	EHS0291ZZ		
	18292501	WIRE CLAMPER #2104	1

MODEL : JACK TERMINAL PWB ASSY

SYMBOL	PARTS NO	DESCRIPTION	QTY
C901	43983306	CE04COJ471 (NEW SS)	1
C902	430A8112	CE04C1C470-5BSRA, AT	1
C903	430A8110	CE04C1C220-5BSRA, AT	1
C904	430A8110	CE04C1C220-5BSRA, AT	1
C905	430A8110	CE04C1C220-5BSRA, AT	1
C906	430A8112	CE04C1C470-5BSRA, AT	1
C907	430A8112	CE04C1C470-5BSRA, AT	1
C908	430A8128	CE04C1H010-5BSRA, AT	1
D901	360KA025	DIODE 1SS133, AT26	1
IC901	37101250	IC BA7026L	1
JK901	79V06321	A/V CONNECTOR (21P)	1
L901	610G2775	FILTER COIL L101J, BT ELEPK, A	1
L902	610G2775	FILTER COIL L101J, BT ELEPK, A	1
MD901	34354028	RF, MODULATOR (PAL, 136) AL2	1
R901	401KE673	RD1/6PTY1.0KJ, AT26	1
R902	401KE646	RD1/6PTY75HJ, AT26	1
R903	401KE685	RD1/6PTY470HJ, AT26	1
R904	401KE646	RD1/6PTY75HJ, AT26	1
R905	401KE673	RD1/6PTY1.0KJ, AT26	1
R906	401KE673	RD1/6PTY1.0KJ, AT26	1
TR901	35902912	TRANSISTOR 2SA 952 L	1
LPF901	69699005	DS310-55B271	1
LPF902	69699005	DS310-55B271	1
C909	42319100	CC45SL1H391J, B	1
C910	42311100	CC45SL1H391J, B	1

MODEL : CASSETTE HOUSING ASSEMBLY

SYMBOL	PARTS NO	DESCRIPTION	QTY
A301	16441731	LOADING BELT	1
A302	35290301	PHOTO TR PT361	2
A303	65330045	TACT SWITCH	2
A304	79502029	DC MICRO MOTOR RF-280R-10350	1
A305	67012026	CASSETTE HOUSE LAMP	1
A306	16582271	MIRROR	1
B070	65907089	REC SAFETY SW	1